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THE

# AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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VOL. VI.—No. 10.] OCTOBER, 1877. [NEW SERIES.

## Address of President Wilder.

At the 16th biennial session of the American Pomological Society, held in Baltimore on 12th September, (an abstract of whose proceedings are given in this No. of the *American Farmer*,) President Wilder's Report was read of the history and preceding operations of the society up to the time of the present meeting. This paper of the venerable Wilder, who has presided over the Society from the beginning of its existence, is one of the most interesting and satisfactory statements that has ever been published of the rise and progress of this great branch of industry in this country, and entitles it to have a permanent place in the pages of our old journal, whose aid to the cause of horticulture, as well as agriculture, the venerable president bears testimony.

After his preliminary remarks of congratulation on their re-assembling, the president proceeds to present to the members an account of the remarkable growth and influence of the association in the following terms:

GROWTH AND EXTENSION OF THE SOCIETY.

At the first meeting of the Society, in the year 1848, there were but twelve States represented by delegates, while at our last session in Chicago, in 1875, there were, as may be seen by the Report on Credentials, twenty-eight States, Territories and Provinces represented in person, and nine by letters of correspondence,—making a grand total of thirty-seven. In 1848 the attendance was limited by the number of delegates present from these twelve States, and the jurisdiction of the Society by the area which they represented. Now we have on our roll the names of three hundred and thirty-eight members, and its field covers the entire territory from Canada to Texas—from Nova Scotia to California. From nearly all of these States and districts reports are regularly received of the progress and condition of fruit culture therein, with fruits for identification and comparison, and with lists of those adapted to their several localities. And here let us acknowledge with gratitude the noble and generous manner in which the various State Societies and Fruit Growers' Associations have coöperated with our institution to bring about the grand results which we have witnessed.

With the close of the present session the Society will have held sixteen conventions, and will have entered on the thirtieth year of its existence.

At the time of the organization of our Society, the cultivation of fruits for the market, or for exportation, was limited to a few of the older States. In Mr. Coxe's opinion the fine apple-growing section was bounded by the Mohawk river in the North and the James river in the South. Fruit growing in this section was confined principally to apples and peaches; but very few of the latter found their way to the markets of the North, while strawberries and other small fruits were scarcely to be seen, except in the locality where they were raised.

But now, almost every steamer from New York for Liverpool or London, in the fall and winter months, takes apples varying from five hundred to three thousand barrels. Shipments have been made from other ports, and as late as last May there were fifteen hundred barrels sent to England from Philadelphia. In December last, ninety thousand barrels of American apples were landed at Liverpool. Very little difficulty is experienced in the winter months, but arrangements have been made to ship in warm weather by vessels with refrigerator compartments.

As the refrigerating process becomes more and more perfect it will aid largely the exportation, not only of apples, but of more delicate fruits. Pears, peaches and grapes have been sent to England in good order, and it is confidently expected that American peaches will soon be well known in the markets of England.

But what shall we say of Canada, Iowa, Wisconsin, Minnesota, Kansas, Nebraska, California, Oregon and other sections, and other new States and Territories, where the cultivation of fruits had scarcely commenced when this Society was

established! Who that witnessed the exhibitions of fruit from the States first mentioned at our various sessions in Richmond, Boston, Chicago, and at the Centennial in Philadelphia, has not been surprised at the progress already made.

The estimate by the Government for the Centennial, last year, furnished the following statistics (soon to be published) of the fruit culture of our country:

The number of acres under cultivation, in orchards, vines and small fruits, is estimated at 4,500,000. The number of trees is estimated as follows: apples, 112,000,000; pears, 28,260,000; peaches, 112,270,000; grapes, 141,260,000; total 393,790,000. The estimated value of fruit products is: apples, $50,400,000; pears, $14,130,000; peaches, $56,135,000; grapes, $2,118,900; strawberries, $5,000,000; other fruits, $10,432,800; making a grand total of $138,216,700; or, nearly equal to one-half of the value of our average wheat crop. California, to say nothing of figs, oranges and almonds, has nearly one-third of the whole grape area, sixty thousand acres of vineyards, and forty-three millions of vines, yielding annually, besides grapes and raisins for the market, ten millions of gallons of wines, to which may be added the wines of Missouri, Ohio and other States,—the whole wine product being fifteen millions of gallons as the annual crop.

The following are a few illustrations of the immense quantities of fruits which are sent to market in addition to what is consumed at home.

Of strawberries, there were received in one day, in the New York market at the height of the season, from all sources, 7,000 crates, averaging at least a bushel and a half each—more than 10,000 bushels. The crop of peaches raised in this country is so enormous that we hardly dare state the quantity. The largest crop was in 1875, and on the peninsula of Delaware and Maryland alone was estimated at between 7,000,000 and 8,000,000 baskets.

From California, according to the statement furnished me by Mr. E. J. Hooper, editor of the California *Horticulturist*, there were sent East in 1876 three hundred and thirty-four car-loads of fruit, of four hundred bushels each; an increase of more than one hundred per cent. over the previous year, one firm having sent seven hundred tons; and of the strawberry, it is estimated that from San Jose and vicinity, some days there were sent for home consumption forty tons of this fruit, and in a circuit of about five miles there are more than a thousand acres of this fruit under cultivation. Dr. Strentzel, our Chairman of the Fruit Committee for California, writes, that, at short notice, that State can furnish the whole continent with an overflowing supply of fruit.

From Virginia, Mr. Leighton, our Vice-President, writes, that the increase of strawberry culture in the vicinity of Norfolk is astonishing, completely heading the page of horticultural progress, and that it seems wonderful how the demand keeps pace so closely with the supply. The shipments this year have been over three millions of quarts. There were 1,700 pickers in the field in one day. One grower had 185 acres. To Boston alone there have been shipped this year 11,547 crates, of 45 quarts each, or more than 16,000 bushels.

In Illinois very little fruit was raised, except for home use, until 1840, when, according to Mr. Flagg's interesting historical address before the State Horticultural Society, a new era in fruit culture commenced. Now there are 320,000 acres of orchards in that State. Mr. Parker Earle informs me that in a good season there have been sent from his station alone (Cobden) twenty-five car-loads of fruit daily. Of strawberries, where scarcely any were raised sixteen years ago for exportation, within six or seven years the cultivation has increased at Cobden and vicinity to over one thousand acres, so that five or six car-loads daily are dispatched to the various markets.

From Georgia, Mr. Berckmans, President of the State Horticultural Society, writes as follows of the late exhibition of his Society:

"Many of our people of intelligence were amazed at our progress. The exhibition of fruits was grand. I am safe in saying that the display of peaches was never surpassed, if equalled, in any place in the past. I had fifty-six varieties of peaches, all ripe and in perfection; others had collections almost equal in number, and several surpassing in size. Many had peaches measuring twelve and one-half inches in circumference. The grape show was almost equal to the peach exhibit. Upwards of fifty varieties were exhibited. Some wonderfully fine Concords were shown, which weighed one pound to the bunch. Pears were fine, but not numerous as to varieties." He had forty varieties in eating condition, which, together with the balance of his collection, made nearly two hundred varieties of fruits.

The increase in the crops of apples, in New York, Michigan, and the more Western States, is wonderful.

From New York, it is estimated that in abundant years, one and a half millions of barrels are exported in addition to those consumed at home, a single firm at Boston receiving from that State from 30,000 to 40,000 barrels of apples per year. In the best seasons, Monroe, Niagara and Orleans counties produce more than one million barrels of apples, and the value in one county is stated to be a million of dollars.

Michigan is a great fruit-producing State, and many parts of it fully up to New York. The crop of apples in this State is estimated by Vice-President Lyon at $2,000,000 in value; peaches $1,000,000, and other fruits $1,000,000, or a total of $4,000,000.

### TROPICAL FRUITS.

The reports of Mr. Bishop, Chairman of the Fruit Committee for Florida, and of Mr. Redmond, Vice-President for Mississippi, give promise of a great increase in the cultivation of tropical fruit. This, says Mr. Berckmans, has revolutionized the State of Florida within the past ten years. It has long been known that the climate of Florida was well suited to the cultivation of the orange, but it is within the last few years that it has been practically demonstrated that this, as well as many other tropical fruits, could be grown with profitable results. Florida oranges were, until within a few years, seldom seen in our northern cities; now the bulk of the consumption is derived from the flowery State. In this, as in many other fruits in other sections

of the continent, there has been great improvement, by selecting the best varieties for propagation, until the standard of quality of the orange in California is based upon that of Florida oranges. The lower portions of Mississippi and Louisiana produce large quantities of oranges, but they are seldom shipped to the northern cities,—New Orleans consuming all that are produced in the surrounding parishes. Bananas are being extensively grown in lower Florida, and find ready sale at remunerative prices. Limes, shaddocks and lemons have received increased attention, while pineapples have been found to be very successful in the southern portion of Florida. The date begins to thrive successfully on the coast of lower Georgia and will doubtless ere long be extensively cultivated. California now raises seven millions of oranges annually, and it appears probable that this State, with the Gulf States, can furnish all the tropical fruits required for the consumption of the whole country.

NEW AND VALUABLE AMERICAN FRUITS.

The introduction of new American varieties from seed, adapted to all sections of our vast territory, not only in itself, but as incentives to further progress, cannot be overrated. To this, more than to any other cause, are we indebted for the rapid progress of American Pomology. Fruits of foreign origin, although of great value in certain sections of our country, have not as a rule yielded such favorable results as those selected from our new and improved native fruits. By this means we have not only introduced new varieties, adapted to every section of our country, but varieties which have prolonged the season of fruits in some sections, either by early or late kinds, for one or more months. Especially is this to be seen in the peach, grape, and strawberry, so that many of our markets are supplied for a much longer period than ever before.

IMPROVEMENT IN PACKING AND TRANSPORTATION.

Much of our progress in pomology and horticulture is due to the increase of facilities for transportation afforded by railroads and steamboats. Especially is this the case in the Southern and Western States, and California. These railroad and steamboat facilities have induced fruit-growers to increase their products, being assured they would arrive in good condition in distant markets. But these improvements in transportation would have been of but little advantage had they not been supplemented by careful packing. Steamers and cars are now provided with large refrigerators, by which delicate fruits can be sent long distances, even to Europe. The various styles of fruit packages, every class of fruit being provided with one suited to its character, are wonders of cheapness and efficiency. The obstacles with which we formerly had to contend have been mostly removed, so that fruits can be sent safely to very distant markets, where it was impossible to send them ten or fifteen years ago. This increased supply has increased consumption and caused a corresponding decrease in prices. It has made fruit almost a necessary portion of our daily meals, thus largely fostering its production. The packing of trees has also received more attention than formerly. Experience has taught us much on this point, especially in adapting it to the character of the voyage and the climate through which the trees are to pass. Thus trees shipped by our friends, Ellwanger & Barry, to Australia, after a voyage of fifteen thousand miles and being one hundred and fifty-three days on the way, were received in safe condition. Only three trees out of one hundred and sixty were dead.

In this connection I desire to impress on the packers and shippers of fruit to foreign lands, since our best American apples have sold in London at much higher prices than English and French apples, the great importance of especial vigilance in seeing that no inferior fruit ever crosses the ocean: thus preserving the integrity of our fruit-growers and dealers, and the reputation of our nation for the superiority of our fruits.

[The Report proceeds to show the perfection attained in the canning and drying fruits, which gives the assurance that we need not fear an overstocking in the future. We may give this part of the Report hereafter.]

POMOLOGICAL LITERATURE.

Among the most important agencies which have contributed largely to the advancement of the pomology of our country, we desire to speak especially of its literature. One hundred years ago this had not begun to exist in our country. Then there was not an agricultural, horticultural, or pomological society, not a periodical or paper devoted to the cause of terraculture.

[After giving a brief account of the various reports known from Horticultural Societies, and of the contributions to the science by distinguished pomologists, the Address continues:]

The first strictly pomological work published in America was Coxe's "View of the Cultivation of Fruit Trees," which appeared in 1817.

Through foreign correspondence and commercial intercourse, the zeal which had been awakened in Europe soon extended itself to our shores; trees, scions and pomological books of foreign origin, were freely added to our own collections. Societies were formed, new nurseries established, catalogues published, and a general desire manifested for new and improved fruits.

In this new enterprise, Coxe, of New Jersey; Hosack, Buel, and David Thomas, of New York; Mease, Carr and Landreth, of Pennsylvania; Lowell, Manning and Downer, of Massachusetts; Young, of Kentucky; Smith, of Rhode Island; Ives, and Munson, of Connecticut; Corse, of Canada; Hildreth, Longworth, and Kirtland, of Ohio; Corse, and Rogers, of Maryland; Kenicott, and Dunlap, of Illinois, and others, soon became actively engaged.

We have spoken of the early publications of Horticultural Societies, but there is another class of publications to which we are even more indebted. In 1819, appeared the forerunner of the present host of agricultural papers, *The American Farmer*, which still continues in a green old age, and it is a pleasant coincidence that we meet in the city where this first journal saw the light of day, and whose editor is the secretary of the society whose hospitality we are now enjoying.

Then came the New England Farmer, the Genesee Farmer, and the Albany Cultivator, through whose columns information began to be widely disseminated. Then came the fruit books and publications of the elder and younger Prince, Thacher, Manning, Kenrick, the Downings, John J. Thomas, Hovey, Barry, Brinckle, Warder, Hooper, Elliot, Field, Fuller and others. Nor should we fail to mention as powerful agents in advancing the cause, Hovey's Magazine of Horticulture, the Horticulturist, the Gardeners' Monthly, and the American Journal of Horticulture. Another class of pomological literature deserves prominent recognition, viz.: the host of descriptive catalogues of our nurserymen, many of which are of the most reliable, instructive and interesting character. Ultimately, as a consummation much to be desired, came the Proceedings of the American Pomological Society for the last twenty-nine years, embracing in consolidated form the reports of the various States and districts, the discussions, the catalogues of fruits adapted to each section of our country, and other information, such as is nowhere else to be found in the history of pomological literature. Through these publications the reputation of our American fruits has attracted the attention of foreigners, so that European catalogues now possess many names of American varieties.

CONCLUSION.

Standing here as conservators of American Pomology, enjoying as we do such peculiar privileges for research and discovery, let us use every effort to advance our cause by diligent experiment and observation, so that as we come up from session to session, we may add something to the common stock of information, and thus develop for the good of mankind the rich treasures which our science has in store for the world. Thus let us work on, hand in hand, to scatter these blessings broadcast through the land. Others may seek for the honors of public life or the victories of war, which too often carry with them the recollection of wounded hearts and painful disappointments. But let us continue to work on, feeling assured that our labors will cause no regret. As Mrs. Sigourney has beautifully versified my former remark—

"No sting in the bosom of memory we're leaving,
No stain on the pinion of time."

Let us commence the new century in the history of our Republic with increased enterprise and zeal for the promotion of our cause, and should any of us be called from our labors on earth, let us feel assured that others will continue the work we have begun and carry it forward to still greater perfection. Let the successes of the past stimulate us to greater exertions for the future. Let us work on, full of hope, regardless of all obstacles,

"Still achieving, still pursuing,"

until we shall reach that better land where the garden shall have no blight, fruits no decay and where no serpent lurks beneath the bower—where harvests are not ripened by the succession of seasons—where the joys of fruition shall not be measured by the lapse of time.

[We regret being obliged to omit the tribute paid by the venerable president to numerous co-operators in the cause of Horticulture, who have ceased from their labors and are now at rest.]

## Grange Meeting and Pic-Nic in Baltimore County, Md.

The public meeting and pic-nic of Baltimore County Grange No. 13, on the 18th ultimo, at Cockey's Woods near Ashland, on the Northern Central Railway, was one of the largest and most successful affairs of the kind ever attempted in the county. It is estimated that there were from 2,000 to 2,500 persons present.

The ceremony of the public installation of the officers of the county grange attracted much interest. A capacious platform had been erected, and this was arranged as for a regular session of a working grange, with the addition of a number of beautiful decorations, appropriate mottoes and emblems. The whole platform was festooned around with evergreens, and an abundance of flower-baskets of drooping vines, fruits, &c. Over the seat of the Master was hung a motto in neatly-wrought characters of red, blue and gold in a white ground, encircled by an edging of green: "The Grange—may it be perpetual." Back of the chair of the Overseer was suspended a similar design: "Coöperation, the Keystone;" and over the place of the lady officers another: "Faith, Hope, Charity—the Foundation, the Solace, the Guide of our Order." In front of Ceres stood a sheaf of ripened grain and a silver sickle; before Flora a vase of beautiful flowers; and before Pomona another artistically arranged with luscious-looking and bright-colored fruits.

The installation ceremonies were performed by Joseph T. Moore, Esq., W. Master of the State Grange of Maryland, assisted by P. A. Bowen, Esq., W. Master of Prince George's County Grange, and in a manner at once imposing and attractive. The audience, notwithstanding its extent, was attentive and quiet to a remarkable degree.

The effect upon the numbers assembled of the beauty, the appropriateness and the exalted morality of the manual, seemed to be excellent, and no doubt the result of the meeting will be numerous additions to the Order.

This ceremoney over, the County Grange and the assembled visitors adjourned to the stand which had been erected for the speakers. This structure was handsomely and appropriately decorated with farm products, stalks of corn, sheaves of wheat and rye, fruits, vegetables, garlands of evergreens, flowers, &c.; the archway over its centre being surmounted with a plow, and bearing the legend: "Agriculture is the most noble employment of man;" over the wings were others: "The Profit of the earth is for all;" "The King himself is served by the field."

Col. B. F. Taylor, Master of the County Grange presided and introduced the speakers, the first of whom was Hon. Levin L. Waters, Overseer of the Maryland State Grange.

Mr. Waters, after some allusion to the beauty and fertility of the country in which he found himself, and the intelligent appearance of his auditory, proceeded to comment upon the causes which gave rise to the grange organization, and the objects it sought to accomplish, and its advantages, social, moral, political and financial.

He said when the Grange was inaugurated, organization was absolutely necessary. Monopoly and centralization seemed to be the order of the day. The capital of the country was rapidly being absorbed by monopolists, who were oppressing every unorganized industry of the country. The poor farmer, after a year of hard toil, found himself in debt and scarcely able to procure the necessaries of life, and without the means of advancing and educating his family. Every other branch of industry had its trade union, and manufcturers were protected by a prohibitory tariff from foreign competition. The farmer felt that he needed protection. Corporations were growing rich whilst he was growing poor, and their agents and middlemen were swarming all over the land like birds of prey. The Grange was organized for his protection and advancement. Scarcely ten years ago was the movement inaugurated in the United States, and the little acorn then planted has become a majestic oak, whose branches extend over nearly every county of every State in the land. Since the organization of the Grange nearly all the prime necessities of life have cheapened from ten to forty per cent. Manufacturers are brought face to face with the agriculturist, and the farmers are now able to purchase products directly from the purchasers, at prices which were absolutely refused them before the organization of the Grange. Fertilizers and farm machinery have all been cheapened, and to-day the farmer is in a better and more prosperous condition than he was ten years ago. He did not pretend to say that this condition of things was entirely the work of the Grange. Other causes had their effect upon the markets of the country. The grange has been an instrumentality in teaching the granger where to buy and where and how to sell his products. Not only has the granger been advanced by it, but farming communities in general have been advanced by it, whether the people belonged to the order or not. It is therefore the duty of all farmers to stand by this system and sustain it, those outside of the grange as well as those inside of it. The Grange is an educator and an advancer of the people. It brings together people from various parts of the counties who have scarcely ever met before; friendships are formed, and people begin to know and understand each other. On the floor of the Grange the humblest and poorest farmer in the land is welcomed as a brother, and stands a peer to the most intelligent and wealthy. The scientific man instructs his less accomplished and educated brother, whilst, on the other hand, the practical farmer, by giving his experience in the practice of agriculture, tell the educated man how to apply his science. On the floor of the Grange we find the introduction of the very best part of society—woman. The asperities of debate are softened, and there is a refinement there which you will never find in secret societies where her presence is not felt. Any lady in the land, however fastidious, pure, chaste and upright, can walk into the Grange without fear of being insulted or of hearing anything that will offend her sense of propriety. She stands in the Grange an instructor and educator. The Grange is not a political organization. Men of extreme opinion, ultra Radicals and ultra Democrats, may meet in the Grange without fear of collision. But the Grange, by its doctrines of honesty, by its teachings of frugality and economy, is capable of wielding a powerful influence over the politics of the land.

The Grange should exercise its influence and power over the legislation of this country, for the protection of agricultural interests from monopolies that control them, and especially in the matter of transportation. He would not say that it was the province of the Grange to make war on the corporations of this land. Every intelligent granger knows too well how necessary is the prosperity of these institutions, to make war upon them. No intelligent man asks that any means of transportation shall render service for which they are not paid. He knows that the products of the farm, when in excess of the wants of the farmer, would be useless upon his hands without means of transportation. They are willing and anxious that they should receive compensation for the labor they perform, but they are unwilling that those monopolies should levy an unjust taxation upon them. Railroad companies have charged five and one-half times as much for transportation of perishable articles as for articles not perishable. The secret of that is, that articles not perishable may be transported by water where there is competition. It is reasonable and just that they should carry perishable articles at advanced rates, but they do not run their trains at five times greater speed, nor do they assume five times the risk on one than on the other. Until farmers go together as one man, and knock at the doors of legislation, these discriminations will be made against them. The recent decision of the Supreme Court of the United States, the speaker said, satisfied him that they had power to ask and power to enforce. That decision shows that a Grange, united and combined, can wield an influence for good that will be felt in the land. It is the duty of the people to teach these monopolists who are absorbing the capital of the country that you are a power in the land. The Grange has also had an effect in teaching that wealth is not to be accumulated suddenly with clean hands and honest hearts. There is an uneasiness all over the land because some men have suddenly risen from poverty to affluence, from the humblest positions in life to the most exalted in the land. This uneasiness is felt even in the homes of honest patrons, and when men become uneasy they cannot be satisfied to plod along in honest toil and gain an honest livelihood when neighbors, who have no more capacity than themselves, by sudden and unexplained means grow wealthy and their families placed far above theirs.—The wife and daughters complain that the husband and father has a want of ambition, that they do not have the advantages of society to which

their education and birth entitle them. They know little of the ways that are dark and the tricks that are vain by which these people rose to wealth and position. It is the duty of the Grange to teach people that honest labor and plodding toil is the only sure road to competence with clean hands and pure. The Grange teaches you to love home with its surroundings, the beauty of all things that surround your farm, the care of your stock, the cultivation of your fruit and the adornments of your home.

Hon. V. E. Piollet, Master of the Pennsylvania State Grange, then delivered an address, from which we take the following extracts:

I know that you are expecting more of me than I have the power to give you, for I am no orator, but was raised upon a farm and have been the companion of hard labor. I never rise to address an audience of my fellow citizens on the subject which I shall invite you to consider without wishing that some one more able than I were chosen who could in language of livid light arouse and awaken the isolated farmer, and impress upon him the importance of associated action and co-operation. However ancient that isolation, break it up once and forever. If there were no other reason, the condition of our class in the Old World ought to sensibly impress you with the importance of united action. Once they were like ourselves, proprietors of the homesteads in which they raised their offspring, but now they are tenants at the will and beck of a landed aristocracy who have taken their homesteads, their inheritance, and driven them to the condition they are now in—of all the men on earth the most pitiable and miserable. Shall that be the lot of that class on this continent? is the question I ask myself, and it is the question for you to consider. What will avert this fearful doom to the agricultural class, the people of all others who make the annual added wealth of the world, and who produce every article of human subsistence, and the raw material of which is made every fabric for human wear? So long as republican equality lasts so long will we maintain our proprietorship. We wish to break up this isolation and organize, and place our class upon an equality with other avocations.

You who are outside of our order have seen the secret inside of our Grange; you have heard the invocation of Heaven, you have witnessed the installation of officers, our services in the interest of agriculture and our devotion to it—in fact you have seen everything but how we get on the goat, and that is none of your business. [Laughter.] Now, farmers, what are your objections to uniting with your fellow-laborers in this cause? If there is no such organization in your township, appropriate one day in six to meet at a stated place to consider and inquire what is the reason the interests of agriculture do not stand on the same platform with other avocations. For my part I cannot see why the farmers do not stand together solidly. A gentleman recently said to me, "What if every avocation combine?" Every avocation has combined long since, and the farmers are the only men who have not combined. There is not one avocation that you can name to me that has not had its organization long years ago. There is no avocation that is not more profitable than farming. We read in the journals throughout the country of nothing but railroads, banks and manufactories, as though they were alone the industries that characterize this country. Laws are made to distinguish between agriculture and other avocations, and that is the reason we are the poorest paid of all the avocations on this continent. The manufacturer has the satisfaction of knowing that he can force us to take his product at his price, while he can turn around and tell us he can buy his raw material wherever he pleases. There is not a farmer in Maryland who makes three per cent. upon his capital after paying for the labor he employs. If there is one such within hearing of my voice I should like him to speak out, and I would go home with him, stay a week and try to learn how he does it.—Why is this so? Because every other avocation has come together and combined and co-operated to take advantage of the isolated farmer, the man who is contented with remaining and operating alone. Unorganized men are never a match for the organized.

Let us see if the laws of our National Government do not operate equally against you. Take any one of our industries—they all have some little protection, it is true. There is 35 per cent. duty on manufactured leather, but there is no duty on hides, so manufacturers can go to South America and purchase their hides and bring them here free of duty, and we have to sell ours in competition with those hides. It is American industry to tan a hide, but it is not American industry to produce a hide. There is a duty of 6 cents a pound on wool, but there is a duty of 60 and 80 cents a yard on manufactured cloth. Now it takes as much capital and labor to produce a pound of wool as it does to manufacture a yard of cloth. It is as much American industry to do one as the other, and we have the right to ask for laws regulating this protection, and if there is any class protected we should stand protected with them, and then we can talk of this being a government of republican equality. * *

Five-tenths of the people of this country are engaged in agriculture, and what representation have we? A member of Congress sent me a Congressional Directory which gives the residence and avocation of each member. I took my pencil and marked where every man was born and what his profession was. I put down L for lawyer, and, heavens, it was L all the time. After a long time my patience was rewarded by seeing an F, which stood for farmer, and also an M for merchant. And of the 369 men who compose the two Houses of Congress, 269 were lawyers, 26 were merchants, 23 were farmers, and some 13 or 14 were manufacturers and bankers, and to my amazement there were men there who said they were gentlemen. It had never before occurred to me that there had been any gentlemen in Congress for the last 10 or 12 years. How is it possible to have just laws with this distinction in favor of other classes and against our class? In Pennsylvania we were told that we must have a new constitution, that there were some holes in the old one. We had a convention authorized by our legislature to be composed of 133 delegates, and of those 133 delegates there were 112 lawyers, 3 doctors, 3 farmers and 15 railroad pre-

sidents and bankers. How could this have happened but for our isolation?

We have one provision in our Grange ritual which will save you a great deal of money if you will join. We do not go to law. We have a Quaker maxim in our organization. No two patrons can go to the law until they submit their controversy to their brothers and sisters in the Grange. Now, men cannot be restrained by men, but I have never seen an instance where women cannot do it. We have had some of the worst lawsuits settled in our Grange by women, whose whole mission in life is to bless man. You would think when you hear the jeer, "You have women in the Grange!" that these fellows never had a mother. We have women in the Grange and we want them there.—Why should women not be there? Does she not share the hardest labor on the farm? Is she not the first to rise and last to go to rest? We may hie ourselves off and lounge around on the counter of the merchant, but the wife must stay at home and wash the dishes and set the table for the morning meal. We in our Grange discuss all the improvements in agriculture and endeavor to find a practical way to get out of the slough we are in. Why should not the wife hear it and learn how to manage the farm herself, and rear her family should she be deprived of her natural protector? But if she puts the estate in the hands of a lawyer, God help her!

How do these lawyers get into office? Why, they have a Grange they call the Bar Association, and a most effectual one it is. It acts like a talisman and has a great charm for farmers. They ask the lawyer what they shall do and he tells them, "Send me to Congress and I will make the laws of this country; farmers cannot make laws, they were made to raise potatoes." Throughout the history of Pennsylvania the legal fraternity have made our laws just about in proportion as they made our Constitution. We have scarcely a statute in Pennsylvania that is not susceptible of two interpretations, and if you and I get into trouble with each other and hie ourselves off, one to lawyer A. and the other to lawyer B., the lawyers will take down the same book and read the same statute and show that both are right; and our laws are made thus so that their avocation is perpetual. I do not know that a farmer could make laws, but I want to find out whether he can or not. When it is fairly demonstrated that he cannot read the Bible and make a law, I will take back all I have said. We derive all our ideas of law from that book and we are told by the highest lawgiver that the law should be yea, yea, nay, nay, so plain that the "wayfaring man, though a fool, need not err therein."

Every class should have representation in proportion to its numbers, and that is the only way to perpetuate the institutions of this country. There is nothing in the national government made to benefit us. We have a little Bureau of Agriculture and it has been presided over by a lawyer ever since it was instituted, and we have been in the habit of getting lawyers to address our agricultural fairs and tell us what they know about farming. What has the government done for the farmers that produce cotton. Last year there was raised about $243,000,000 worth of cotton and there was about $45,000,000 worth manufactured in this country. Every other pound was sold in the old world in competition with the Hindoo labor of India, and we have to buy it back manufactured with a protective duty of from 40 per cent. to 80 per cent. That is protecting American industry! The Grange has done some good in Pennsylvania, and you will find that the volcano will burst forth there one of these days. The Grange will educate our young men to stand up and defend the rights of their class. Farmers of Maryland, you ought all to organize. Do not be deterred by jeers; do not be deterred by anything. Meet as regularly as the railroad men and men of other avocations who meet weekly to manage their own affairs, and let other avocations into our Grange when they let us into theirs. There are still other secret associations quite as secret as ours. The family circle is a secret association. There is no one who goes in the door without knocking. There is nothing secret about the Grange but what ought to be secret. We ought to know only that which ought to be known by those who have no interest in conflict with our purposes. But we have a stern work in hand and it is to raise up from our fallen condition and to make us equal with other classes, to give us the means by which we can provide for our families as well as the merchant and banker.

I wish, my fellow-farmers, to make this remark for those of church organizations who think secret organizations are not what they ought to be. Tell them that ours is not any more secret than theirs. When they discipline any of their members they do not ask anybody in but the deacons. We have about the same secrecy as the family circle and railroad associations. I want you to tell them that the farmers of America are in danger of being overthrown and of losing their proprietorship. I do not tell you what you must do, but men must be men and work your road to equal representation. The law-making bodies of this country deny rights which are not common to all, so let us perpetuate these advantages won by our fathers in the seven years' struggle for liberty which ended at Yorktown.

At the conclusion of Mr. Piollet's remarks, Mr. Robinson, Lecturer of the Maryland State Grange, was introduced and made a very interesting and entertaining address.

Of this, the Towsontown *Journal*, to whose excellent reports we are indebted for the above extracts, very truly says:

"None but a magnetic speaker like Mr. Robinson could have held an audience for such a length of time, when the sound of music and dancing had begun to electrify another portion of the grounds."

We regret that we cannot give a synopsis of this able and really eloquent effort.

A feature of the meeting was the exhibition of farm and household products, agricultural implements and machinery, improved live stock, which were presented on the ground. Committees were appointed to examine them and pass upon their merits.

U. G. Miller & Co., of Ashland, Md., had a complete line of plows, cultivators, &c., which the committee commended as equal to any in use. L. H. Lee & Bro. showed one of their New Champion Mowers, the mere motion of which attracted the admiration of the committee. T. T. Gorsuch showed sixteen of his handsome Berkshire pigs; and John Merryman, several of his Herefords; a number of samples of corn, potatoes, millet, &c., were shown, as also a handsome collection of jellies, native wines, specimens of female handiwork, all of which were appropriately noted by the committees.

## The Virginia Agricultural College.

ADDRESS BY COL. BEVERLY.

From an account of the commencement exercises at this institution, in the Richmond *State*, we take the following:

Wednesday was commencement day proper. It began with a formal inspection of the College Farm by the Board of Visitors, officially, and by many other gentlemen—notably Messrs. Bowman, (chairman of the Executive Committee of the State Agricultural Society,) Ott, Tyler, Cowan, Mathews, Beverly, and others interested. It was reported by the Board's committee, and agreed on all hands, that there was the greatest possible improvement in everything connected with the College Farm, and that its condition was highly satisfactory.

That afternoon the college work-shop was inspected. Without going into further details, we will say that students were found doing everything—one, Mr. Joseph R. Haw, of Hanover, in charge of the whole; one running the engine, another the hub-mortiser, another the band-saw, another the spoke-lathe, &c., and that everything was in the most complete order; suffice it to say that the impression on every one was in the highest degree favorable, as it was, too, about the school of drawing. Visitors were constantly calling at the drawing academy during the whole commencement to see the drawings there exhibited—a great variety, from an exquisite water-color sketch of Holy Well in Devon to detailed drawings of bridges, &c.

The commencement orator was Col. Robert Beverly, an extensive and well-known farmer of Fauquier. His address is published in full in the *Southern Planter;* but our space will not permit us to give it entire.

After an appropriate introduction, in which the speaker said his part as the orator of the day was an unaccustomed one, and that he would have felt more at home in giving practical instructions on the beautitul college farm at the plow handles, with the mower and reaper, among the herd of fine cattle, or at the anvil or workbench in the machine shops, he opened his address on the *Importance of a Practical Education.*

Referring to the neglect by the ancients of the sciences and practical art, except such as led to no valuable results, he said: "It has been left to Americans, to *Young America*, in these United States of ours (I believe I can say so now) to develop that Practical Education that is revolutionizing the whole world," and, after reciting the achievements of such practical men as Fulton, Morse and McCormick, and many others, he continued:

Having shown you that this is an utilitarian age in which we live, an age of discovery, I claim that success in this age can only be attained by *work*; by a *practical* application of the talents God has given us; I claim that success in life *is* to *produce something, to make something* for the benefit and use of man. What boots it, though you could translate perfectly at will, Horace, Tacitus, Homer, Zenophon? Or what boots it, though you could speak with the tongue of Cicero or Webster, if you can't produce thereby any thing for the use or sustenance of man?

I claim that the useful man to society, to the world, is he who digs out of the earth something to sustain life, in the shape of food or clothing, and he who shapes and manufactures it so as to make it more available for the use and comfort of man, for without him no other profession or calling could live; and is it not a scandal to the age in which we live, that *he* is least honored, least respected! I ask my friends what is the measure of success in this world? Is it not usually awarded to him who has accumulated wealth, and who judiciously and philanthropically appropriates it to the use and benefit of his fellow-man? Look around you and see if that man has not most usually worked his way up to it from the plow-handle, the anvil, or the yardstick. The old system of education sought to cram the mind with an enormous mass of crude, ill-digested thoughts, retained for a very brief period by an act of memory, the mind wholly inexperienced in the modes of utilizing this material; the best educated man frequently emerges from the college halls into life utterly helpless; the memory gradually loses this knowledge, which was considered power—he falls into idle habits, the five years of his college life, and probably his $5,000, the cost of it, are lost, and the man is lost. Why? Because he was not educated how to *practically* apply his knowledge. Knowledge is power *only* where it confers success.

The education I advocate takes for its motto, *Science* WITH *Practice.*

It seeks to endow the young mind with a clear insight into science, a complete mastery of principles, and at the same time accurate knowledge of and facility and practice in the modes of applying these principles successfully to productive industry. The great problem in my opinion to be solved by modern educators, is *how* to join science with practice in a happy and *fruitful* union. In order to do this, educators must themselves understand and know what are the great life problems the practically educated man must grapple and solve, as a member of modern society.

Neither monastic, nor aristocratic, nor sectarian, nor any exclusive institutions, will meet the modern demand for practical education.

The atmosphere of the place, the *genus loci*, must be in full harmony with the spirit of the age. The teacher must be in full sympathy with the great classes from which his pupils come; he must possess a practical knowledge of the pursuits for which they are to be fitted; teacher and pupil

must work together with a common end in view, and it is requisite that each shall have a clear conception of that end.

It is not for the layman to point out the precise mode in which the alliance between science and practice is to be effected; this is the proper task of the learned scientist, the professional teacher; yet the suggestion may be ventured, that the learned man of science and the unlearned man of practice must take counsel together, if a satisfactory and effectual alliance is to be found. Let not the man of action contemn the man of thought, nor the thinker despise the laborer. Are they not co-workers in one great cause? Where mutual and hearty accord has been reached, *then* will that cause go forward and prosper.

It was and is too much to hope that an effectual working alliance between science and practice in our system of teaching can be reached, except as the slow growth of time; but if it comes once to be admitted on all hands, that science must be allied to practice as a condition precedent to the progress of a system of education which is to meet the demands of modern life, from that time forth valuable results will begin to be developed: the beginning of the *end* will be in view. Yet those who have studied the decadence and fall of old and valued, and valuable institutions, who have observed the tedious birth, the tottering infancy, the neglected youth and long-delayed maturity of those which grow up after them to supplant them, know full well that this generation will sleep with its fathers long ere men will begin to realize the *possibilities* of a system of education *based on science allied to practice*. Yes, my friends, the wonderful inventions and progress of the present century that have been only partially mentioned, are merely the glimmering dawn of the bright day that will shine upon this world by a proper *development* of science brought about by *practical education*.

It was upon this basis that the Virginia Agricultural and Mechanical College was projected.

It is upon this basis alone it can hope to achieve an useful and honorable career. It is one of the pioneers in the great movement—it is *the* pioneer in our own State.

It has a system to create without a model to work by, and to put it in successful operation in the face of many established interests, and in the teeth of prejudices deep rooted and of long standing, it would be too much to hope for the achievements of brilliant and assured success in a few brief years. Yet its success is just as sure as our republican form of government, both being founded on the wants and the will of the *people*. Yes, this Institution is fortunate in this, that it may surely rely upon the sympathy and firm support of that great class, the Virginia yeomanry,—staunch, true-hearted and brave. Some progress in this great work has been made, and a standpoint has been reached, from which a greater and more glorious progress is assured. But patience, mutual forbearance and hearty co-operation on the part of the public, the Board of Managers and the Faculty, are absolutely necessary to success. * * *

Mr. President, this new Institution from which its friends hope so much (and I am proud to be numbered among them), designed by its Board of Visitors and its Faculty to work out the great problem of *self-reliance* in man, has a great moral lesson to teach and enforce by precept and *illustrate by example*, in the face of a deep-rooted prejudice among the *elite* of Virginia society, and a natural indisposition on the part of all men to work. *I mean the dignity of labor.* I am truly sorry to know that the opinion is held by many of the best men of our land, and taught by some, and probably has been proclaimed in your hearing, that labor, manual labor, is *degrading*. My friends, did not the Great God require manual labor of Adam, when He told him in the sweat of his face he should eat bread? and the context evidently implies it was manual labor in digging in the ground. Was not Abraham, as rich as he was, a laborer, namely, in feeding and watering his flocks? Was not our Saviour himself a carpenter by trade, a manual laborer? and is not labor, work, inculcated throughout the Bible? Is it not a notorious fact, that three-fourths of the population of the world have to work manually to support themselves and the other fourth, and does any one believe that a great and merciful God ever created three-fourths of His beings for degradation and dishonor? If He had designed man simply to talk and not to work, would He not have made our heads and brains larger and our tongues longer? For what, I ask, were these strong muscular arms given us? Do you believe that the God who made them, and who throughout His Bible inculcates brotherly love and peace and good will among men, ever designed them simply to fight with? No, my friends, He designed them for work, manual work; and as a proof that *He* did not think it degrading, He selected his Apostles chiefly from the laboring class of men. What is the test of manhood in the soldier, in the citizen, but endurance, the ability to labor, to work.

Manual labor degrading! Oh, that every citizen of our proud old Commonwealth was in the daily habit of such degradation; then, indeed would we hear no more of repudiation and hard times, but have a prosperous, happy country.

I heartily congratulate our State, the friends and patrons of this Institution, and especially its Board of Visitors and its Faculty, on its great success. * * * *

I was a member of its first Board of Visitors, and took an humble part in its organization, and I well remember its small beginnings, its difficulties and its trials, and I am delighted to say that its present proportions (attained in five short years) are almost marvelous; and I am convinced that with a continuance of its present management, in five years more those fine buildings will not contain half the applicants for admission.

Gentlemen of the Faculty, in behalf of the industrial classes, yes, in behalf of the whole State, I thank you. I can only say press onward in your course, and in a few years the 800 or 1,000 young men that you will have in this Institution, will, by the effect of their precept and example on others when they leave it, redeem the old Commonwealth and place her again as of yore, in the front ranks of States. I repeat, for I desire to emphasize the fact, that this College *is* and must be the pioneer in this great work. *Here*, if anywhere, in my best judgment, must be educated and trained those brave and brawny yeomen

who are to bring scientific information and thought directly to bear upon the handicraft of agriculture, mining and manufactures, and who will be neither *afraid*, *ashamed* or *unable* to lay hold with their hands, if need be, and dig manfully into the earth, not only for bread and meat and apparel for themselves, their wives and their children, but also for the development and increase of those taxable values upon which the State wholly depends for all her powers, including the power to preserve her *honor*, dearer than all else, and her *existence*. * * * *

A few words to the students of this Institution, and I will detain you no longer. Young gentlemen, I have taken a deep interest in this College, as especially adapted to the wants of the industrial classes, to which I have the honor to belong; I have watched with an anxious eye your course from the commencement of this Institution, for it *was* an *experiment* in our State; *now*, I believe, an *assured success*. It gives me great pleasure to say to you that your gentlemanly and soldierly bearing on the occasion of your visit to our State Fair last Autumn, was commended by every one. The great success of the occasion we have celebrated to-day, together with the rapidly-growing favor of the Institution in our land, attest your good conduct. I beg you will press onward in your course. The anxious eyes and hopes of your fathers are upon you. The prayers of your mothers, the caresses of your sisters, and the approving smiles of some perhaps still dearer await you; yes, the hopes of this dear old Commonwealth are in the virtue and industry of her young men—*in you*; and what more could you have to work for? Young gentlemen, you are the custodians and bearers of the proudest banner that ever waved over this land: on the one side, the escutcheon and motto of the old Commonwealth, on the other the emblems of art and agriculture showing the dependence of our State on her industrial classes. I charge you that it shall never trail in dishonor, but here on the summit of her majestic Alleghanies, on these beautiful college heights, *plant* it, and swear by all that is holy that it shall never be furled as long as there is a youth in our land deserving its protecting folds.

## Potash in Agriculture.

We are indebted to Prof. W. O. Atwater, of the Connecticut "Experimental Station," for a copy of a report made to the Board of Agriculture upon the subject of potash in agriculture. This report will be found of much interest to all investigators; it is written with the usual ability of all papers and reports from that institution, and throws much light upon subjects connected with the use of this mineral in agriculture, which have been heretofore difficult to understand. We would be glad to give more copious extracts from the report, if the crowded state of our pages permitted, but perhaps the brief allusion to the points of most interest to the great body of readers will be found sufficient to be a guide in the use of this important aid to agriculture.

The professor says that the results of experiments have proved in many cases that manures containing potash brought the best results, when our ordinary fertilizers, our super-phosphates, guanos and fish manures, were not found to be efficient, showing that a considerable portion of the available supply of potash has been consumed, and this must be resupplied or our crops must fail. He says that it, the doctrine, is now well understood that there is a certain list of chemical ingredients constituting the food of the plants, and furnished in larger or smaller quantities by every cultivated soil, each one of which is indispensable to the growth of our crops, and that, if the available supply of any one of these ingredients is deficient in our soil, your whole crop fails; and that one of these is potash. He elucidates from experiments made at Experiment Stations in Germany, in regard to potash, the correctness of the doctrine enunciated. With regard to the chloride of sodium, (common salt,) Prof. A. says, though of very little consequence as plant food, it is, like the sulphate of magnesia, useful in rendering other materials available. Indeed, common salt of itself is often quite valuable as a fertilizer. For certain crops, however, like potatoes, sugar beets and tobacco, it is apt to be detrimental, probably on account of the chlorine which it contains. The chloride of magnesium is known to be injurious to plants. How much injury it does, if any, in the amounts and ways it is applied in the ordinary German potash salts, is not definitely settled.

The ill success obtained in the use of the crude salts as dug from the mines is attributed, and doubtless with considerable justice, to the large quantities of chlorides, particularly of magnesium, which they contain.

By the table which is given the amount of actual potash varies in the different grades, from 9 or 10 per cent. in the lowest to 50 per cent. or more in the highest. Some articles sold in this country have yielded as low as 7 or 8 per cent. The disadvantage in purchasing these poorer articles is a double one. Not only do they furnish very little potash, the bulk being made up of other and inferior or injurious compounds, but the purchaser has of course to pay the cost of freight and handling of this extra material between the mines in Germany and his farm.

Analyses of potash salts by Prof. Johnson, chemist of the Connecticut Board of Agriculture, by Prof. Storer of the Bussey Institution, and by Prof. Goessmann, State Inspector of Fertilizers for Massachusetts, agree entirely with our own, in showing that a large amount of the German potash salts imported into this country are of the poorer grades. This is a "curious evil which needs to be known—and to be corrected." So long as farmers will buy low-priced potash salts and other fertilizers because they are "cheap," and pay no regard to the actual quality, they must expect to get poor wares at dear rates, and have poor success in using them.

The not uncommon impression that German potash salts will do the work of ashes as fertilizers, will hardly be verified in actual

experience. Ashes, as may be seen in the table, contain all the soil-ingredients of plant-food except nitrogen.

The following are the conclusions at which the report arrives:

It is especially advisable to apply the potash compounds—not alone, but mixed with phosphates and nitrogenous fertilizers. In this way the best practical results have been obtained. Peruvian guano, ammoniated superphosphates, bone and fish, furnish nitrogen, phosphoric acid and lime, and, if superphosphated, sulphuric acid also. The potash salts supply potash with more or less sulphuric acid and magnesia. Such mixtures therefore would form "complete fertilizers."

The following are the more important practical conclusions to be drawn from what has been said concerning the use of the German potash salts as fertilizers:

1. Potassium, the basis of potash compounds, is indispensable to the growth of all our cultivated plants. It has at least one specific office in the nutrition of the plant, that of aiding in the formation of carbo-hydrates (starch.) Without a plentiful supply of potash in available forms, full crops are impossible.

2. The German potash salts afford at present the cheapest and most available supply of potash for fertilizers. They supply also more or less of magnesia and sulphuric acid, which are essential ingredients of plant-food, and sometimes deficient in our soils, and of sodium and chlorine compounds, which latter may be beneficial or harmful, according to the circumstances of their use.

3. The higher grades will be most profitable for use in this country, because they furnish the most potassium with the least admixture of inferior materials, on which costs of freight and handling must be paid. The chlorides, (muriates,) with 80–84 per cent. of chloride of potassium, and the sulphates, with 70 to 80 per cent. of sulphate of potash, or the sulphate of potash and magnesia, with 54–57 per cent. of sulphate of potash, are to be especially recommended.

4. For potatoes, sugar-beets, or tobacco, the sulphates are preferable; for other crops, the chlorides, which are cheaper, are equally good.

5. In order to secure uniform diffusion through the soil, the potash salts should be applied as long as possible before the crop is sown. It is well to mix with earth, or to compost, before applying, especially if used shortly before sowing the seed. And, in general, potash salts are well adapted for composting with muck, earth, stable manure, phosphates, fish and the like.

6. The best results are generally obtained by using potash salts not alone but with other fertilizers, as superphosphates, guanos and fish. Mixtures of these latter with potash salt form "complete fertilizers." The proper use of potash salts is as adjuncts to other fertilizers.

7. From 200 lbs. to 400 or 500 lbs. per acre of the higher, and 300 to 600 lbs. of the lower grades, are appropriate quantities.

8. The question of the need of potash in a given soil, can be best decided by actual trial. It will be generally advisable to test the question by experiments on a small scale, before making large purchases.

## Great Yield of Wheat.

At the September meeting of the Lancaster (Pa.) Horticultural and Agricultural Society, Levi W. Groff, of Earl township, presented the following report of his experiment of cultivating wheat:

*To the Lancaster County Horticultural Society:*

I have threshed the wheat grown on one acre, and it made 61 bushels and one peck. It is of the "champion amber" variety. The seed was obtained from Mr. Heiges, of York, Pa., at $5 per bushel. One and a half bushels were sowed on the acre reported.

Mr. Heiges succeeded in raising of this variety 71 bushels to the acre. I cultivated this wheat in the spring of the year three times, between the drills.

The cultivated "Clawson" variety sown by me last fall and now threshed yielded 36½ bushels per acre. The same variety side by side, not cultivated, yielded 25 bushels and two pounds per acre.

It is my opinion that the "champion amber," if raised under quite favorable conditions will yield from 75 to 90 bushels per acre. Mine this year stood on ground too low, and it was sowed a little too late. I have no doubt but such yield is quite possible and probable; and if all the grains in my reported crop were plump and full, my yield would be at least 75 bushels per acre this year.

LEVI W. GROFF.

The committee appointed at the July meeting of the Lancaster county agricultural and horticultural society to visit Mr. Groff's farm made the following report:

We, the undersigned, visited the farm of Mr. Levi W. Groff about harvest-time and fully concur in his report so far as we could judge at the time.

H. M. ENGLE,
CALVIN COOPER,
LEVI S. REIST,
PETER S. REIST.

The thanks of the society were tendered to Mr. Groff.

Mr. Groff exhibited a bunch of wheat heads of the "champion amber" variety, which were examined and much admired, and at the request of Mr. McComsey, briefly explained his manner of cultivating wheat as it has been already printed in the daily papers. His plan in brief is to drill the wheat in rows twice as far apart as is usually done. This he does by removing from the drill every alternate seed distributer. Attached to the drill he has an equal number of shovels, and these are placed so as to run between the rows of wheat, and cultivate it much the same as the ordinary cultivator runs between the rows of corn. There is room enough between the rows to permit the horses to walk without injuring the grain. After cultivating his wheat in this manner three different times, he sowed the ground with clover and timothy, and, although it is too soon yet to tell, he believes he will have a very superior crop of hay.

Mr. Engle said he had examined Mr. Groff's clover and timothy, and believed it would be very superior. He trusted that not a few of our farmers would adopt Mr. G's plan of cultivation.

He would do so himself on a small scale, and from his observation he was sure it would pay.

Mr. Pownall said that on a former occasion he had objected to cultivating the wheat crop in the way adopted by Mr. Groff, on the ground that it would injure the grass that was to follow the wheat; but from an experiment of his own he was now convinced that it would not.

[The extraordinary yield of this wheat will attract the attention of farmers. We believe it was in the same vicinity the Fultz variety originated. One point in the report of importance is that of the success of the mode of *cultivating* wheat, to which attention was called some time since, as being reported at a meeting of the same society.—*Ed. A. F.*]

## Formulas for Composts.

Dr. A. R. Ledoux, chemist to the Department of Agriculture of North Carolina, in its report for August, gives the following recommendations for making composts:

Select for the manure-heap a level spot *under shelter* and convenient to the stables. Remove enough earth to give a gentle slope from every side toward the center. From the middle cut a small ditch 4 inches wide and the same deep, and cause it to slope from center to one side and empty into a half barrel sunk into the earth. This ditch can be covered with a board. The liquids, so valuable as fertilizers and so often wasted, will be caught in the barrel and once in two or three weeks should be bailed out and sprinkled over the top of the heap. Have at hand a pile of dry earth, or better still a mixture of dry earth and ground plaster, and once in two weeks or oftener cover the heap to the depth of an inch or two. By this method there will be a maximum saving of liquids and gases, and the compost heap will not be an offence to the nostrils, even when quite near the house.

FORMULA NO. I.

| | |
|---|---|
| Stable manure | 800 lbs. |
| Cotton seed | 750 " (about 27 bus.) |
| Dissolved bone | 450 " |
| | 2,000 lbs. |

To prepare this formula, spread a layer of barnyard manure six inches deep on the compost yard, *under shelter;* 2d, a layer of dissolved bone 2 inches thick; and 3d, a layer of cotton seed 4 inches thick. Wet the mixture pretty thoroughly with chamber lye, or urine from the stables, but if these are not at hand, with water. Then begin again with the stable manure and repeat the layers and wetting as before, until all the material is employed. The whole heap should then be covered with dry earth or plaster. Fermentation will be complete in from three to seven weeks and the cotton seed killed. When ready to use the pile should be turned thoroughly over and the different layers mixed together.

When used for *cotton* apply 300 lbs. per acre, half in the opening furrow and half with the seed. On poor or old soils 400 to 500 pounds may be used; 150 lbs. with the seed as before, the remainder in the furrow or even broadcast across furrows.

For *corn* use nearly one pint to the hill, unless the land be in pretty good condition, when less will suffice.

On sandy pine lands, or old fields, which are usually deficient in potash, 75 lbs. of muriate of potash may be added. It should be dissolved in the water used for wetting the compost heap.

This formula will do excellently for winter wheat, 400 to 500 lbs. per acre. But when used on this crop, I prefer 50 lbs. sulphate of potash dissolved in water and applied as directed in the case of the muriate of potash. After a backward season 100 lbs. of nitrate of soda per acre, broadcast, in the Spring, will help the crop very greatly.

FORMULA NO. II.

| | |
|---|---|
| Dry muck, peat, or yard scrapings | 600 lbs. |
| Cotton seed | 600 " (about 22 bus.) |
| Acid phosphate | 600 " |
| Muriate of potash | 100 " |
| Sulphate of ammonia | 100 " |
| | 2,000 |

This formula should be composted in the same manner as No. 1, the muriate of potash and sulphate of ammonia being dissolved in water and used to wet the heap, and may be applied in the same proportions. For wheat and rye [or oats 300 lbs. per acre] it may be harrowed in with the grain.

FORMULA NO. III.

| | |
|---|---|
| Stable or lot manure | 500 lbs. |
| Unburnt marl | 500 " |
| Fertilizing salt | 200 " |
| Dissolved bones | 500 " |
| Sulphate of potash | 150 " |
| Sulphate ammonia | 150 " |
| | 2,000 |

This formula may be prepared by composting in layers, as in No. 1, or mix the cotton seed, stable manure, marl and salt together thoroughly in the right proportions, turning them over well, then sprinkle with the solution of sulphate of potash and sulphate of ammonia, and turn the whole over once in two weeks till fermented. The same rules of application given for Nos. 1 and 2 may be observed with No. 3.

## Education for Agriculturists.

*Messrs. Editors American Farmer:*

The interest with which the present effort in Maryland to reclaim its agricultural college from the manifestly unjust control of its late managers is not confined to Maryland.

On the issue *pro* or *con*, the views of those who would give to it, in fact as well as in name, its peculiar line of operation—that not only of possible teacher, but efficient creator, of an able corps of practical agriculturists—depend, it may be safely presumed, to a greater or less extent, the interests of Southern agriculture generally.

The crying need of the South is for just such institutions as the Maryland Agricultural College would be were it organized and faithfully conducted on the principles and plan set forth in those "resolutions" of your junior which seem to have failed of support chiefly because they

were too much to the point—that point being the making agriculture a "specialty."

No public institution having special interests to subserve but will fail of its purpose if those interests do not receive not only direct support, but are fortified also by every possible favorable influence that can be made to bear upon them.

If a laudable ardor to attain high rank as an agriculturist is antagonized daily and hourly by influences calculated to thwart or pervert it into other channels, no solitary agricultural professor, be his capacity and enthusiasm what they may, can maintain his ground successfully. His task will, sooner or later, become perfunctory; and his pupils, as the logical result, will cease to be attracted. The spirit of an agricultural college, not the cold letter of its "specialty" as a teacher of agriculture, will be the dominating influence. If West Point and Annapolis, gold lace and feathers, are the bright particular stars of but a few of the students of our agricultural (?) colleges, he is lamentably ignorant of young men's nature who does not see that the influence of those few would diffuse widely around them an *ignis fatuus* which would fatally betray into contempt for "the shovel and the hoe" a goodly following of would-be U. S. soldiers and sailors. No! U. S. soldiers—not too many of them—are very well in their place; but the country now is urgently demanding an education for the masses, and especially for the agricultural masses at the South: such an education as will lift them above the domination of political tricksters as well as place them on the solid ground of material well being.

In your article, "A Comparison," in the September No. of the "*Farmer*," a few words admirably cover the whole ground of the question:—What should be the purpose and work of Southern agricultural colleges? "To develop, *pari passu*, the morals, mental and physical powers, to form good citizens as well as skillful farmers?"

The subject is a tempting one to enlarge upon; but you have, Messrs. Editors, I am gratified to observe, many able pens engaged on the right side of this controversy, and these few lines are intended as nothing more than a hearty "well done."

Very truly yours, H. E.

*Greenville, S. C., Sept.* 10, 1877.

## Flat against Ridged Cultivation.

*Messrs. Editors American Farmer:*

On page 303, September issue, your candid and doubtless truth-seeking correspondent of Kent county, Md., says: "In our 'book-farming' we often fall into the error of stating principles and facts with authoritative dogmatism, and forget to mention any conditions which may essentially modify the principles, or render them wholly inapplicable. Such, I am disposed to think, is the case in the valuable article of brother McGinnis, 'The True Theory of Farming,' in the July No. of your excellent journal."

After stating results of flat cultivation of early Rose potatoes precisely opposite to those of experiments reported by me, he remarks that "Here is experience clashing with experience. How shall we reconcile one with the other? Is Brother McGinnis wrong in his theory? No; for his theory is drawn from his experience, and is based on scientific principles. The difference is in the conditions of the experiments which in his 'True Theory' are not stated. My land was not light and porous, and the crop had the benefit of heavy and frequent rainfalls. * * When writers undertake to lay down certain fixed rules for cultivation their readers are liable to be misled unless the conditions and exceptions are also stated."

The apparent fairness and the undoubted candor of this criticism seem to demand consideration.

I think the difficulties, and apparently just complaints, of my reviewer may be traced rather to a failure on his part to carefully consider what *was* said, than to inherent defects in the statements and recitals of the True Theory.

It is impossible to even approximate systematic treatment of any great subject, so as to be clearly understood by mere casual readers. But I indulged the hope that no misunderstanding would arise among the few candid and studious readers that could be expected to pursue attentively what I had labored so hard to produce.

Now, however, to avoid incumbrance of the series with superfluous explanations, I will endeavor to reconcile my reviewer's experience with my reported experiments, and with all that was said in the paper he criticises, with additional suggestions to avoid future trouble.

The True Theory, in its various chapters or numbers, is intended to be taken in connection as one whole thing, pointing to the only true and right way. For instance, it teaches that *drainage* and *then* flat cultivation are necessary for the best results with general crops.

Now, if an experiment in flat culture be tried, without the precedent preparation of *drainage*, it is no experiment at all in reference to the flat culture *of the True Theory*, which implies and expressly requires precedent artificial or natural drainage.

So, whatever else in the progress of the series may be said without qualification, must be taken to assume preceding conditions, already announced, as performed.

Long before the argument for flat cultivation was reached, which was only begun in July, drainage had received special attention, and was said to be so important that no mode of cultivation would produce the best results without it. In paper No. 8 may be found the following: "A soil in a propitious clime may be well supplied with plant food, and, in the absence of other conditions, may be sterile. It must be porous and have a circulation of air and water. * * A medium of circulation *in the soil* is as necessary for the vigorous growth of plants as that in their own bodies. * *

Activity in a soil is produced by innumerable physical causes instigated chiefly by water and oxygen. * * Water, although necessary for those purposes, under unfavorable circumstances will produce *torpidity and consequent barrenness.* This happens when the soil is *saturated* and the passage of water arrested, even though the surface be not tangibly covered with the liquid. The pores of the soil are filled, the air excluded, and solidity, instead of porosity, established.

If the plants could grow without atmospheric influences in the soil, still the water, dammed around the roots, would become exhausted of the mineral matter with which it is laden in its passage through the atmosphere and soil, and thus the plants would lose ammonia, carbonic acid, lime, &c., with which fresh coming water is ever laden; while on the contrary the slow passage of water through a porous soil nourishes the plants, and leaves the soil after rainfall in condition for free ingress of air through the same channels. * * In a soil, kept by cultivation and drainage in a condition of porosity, there is maintained in all parts a constant passage of water, during rainfall downward, and during evaporation (in the sunshine,) upward, holding plant food, dissolved from the atmosphere and the soil, supplying the daily wants of the plants."

In paper No. 9, it is said: "If nature has not furnished facility in the constituents of the soil, or in its position, for the escape of all the water, in excess of what capillarity holds, within a short time after a usual rainfall, it must be supplied by *artificial* drainage * * Plowing is the most universal mode of drainage; if of sufficient depth it is sufficient in perhaps more than half the soils of the globe. * * Some soils, owing to their tenacity or their position, are not sufficiently drained by this means. Aid is rendered by opening channels or ditches. * * In the absence of drainage all fertilizers are vain * * and every other condition, consistent with its absence, may be present, and still the plant cannot thrive."

Then in the subsequent paper, criticised by your correspondent, with all this of course in view, level cultivation is recommended, *in view of droughts*, and the following words appear: "A soil with too much water is cold, dormant and sterile."

Now, suppose an experiment be tried to test the "True Theory." Could it possibly be said to *pursue* the theory in the absence of drainage? Can the mere fact of level cultivation proving abortive, on *undrained* land "*not light and porous*," amid "*heavy and frequent rainfalls*," as described by my reviewer, militate against the teaching of the True Theory which says that any sort of cultivation, even with every other requisite, must fail, if drainage be absent.

If we isolate the paper criticised, it seems even then the conclusions of my reviewer are equally at fault. For the gist of the whole argument and experiments, and the sum and substance, are plainly apparent throughout to have been to prove *one* thing, viz: that level cultivation secured *more water* than ridged or hilled. My experiments proved it, and his confirmed it; for he says that the water on flat cultivated plots was superabundant to saturation. So where he tells us "experience clashed with experience," so far from clashing, his experiment confirmed mine in the very proposition which mine was introduced to support. But *his* flat cultivation failed and *mine* succeeded in the crop. There can certainly be no clashing here unless the circumstances were alike. Suppose his flat cultivated soil contained no plant food, or that it was *not drained*, does anything I have ever said or any experiment I ever reported indicate that he could produce a crop by flat cultivation, especially in a wet season? But both his plots were alike, the season the same, and nothing but the cultivation differed. Why did flat fail, and ridged succeed?

He does not say his flat was drained, and what he does say proves it was not. Then it could not do well according to the True Theory, notwithstanding flat cultivation. The ridged did better, how does that accord with the True Theory?

The substance of his experiment seems to be this, that during a season of "heavy and frequent rainfalls" on land that was "not light and porous," he cultivated one plot in ridges, and *thereby drained* it, and the other flat, *without* drainage Both differed from the True Theory; the ridged because it was ridged, and the flat because it was not drained. As the season was wet, flat cultivation was not essential according to the Theory, and drainage was; so, in all that was *essential under the circumstances*, (for that crop,) the ridged was in accordance with the True Theory, because it drained; and the flat in violation, because it was wholly undrained.

The ridged was a bad sort of drainage, with a bad sort of cultivation; the flat was the right sort of cultivation without drainage, which is worse in a wet season than the former, as no cultivation without drainage in a wet season can succeed.

If the ridged mode drains, as well as cultivates, why is it not better than flat? One reason is, that in dry seasons it injures or destroys the crops, and in wet seasons, if the soil is otherwise drained, is wholly unnecessary. Draining should be accomplished in such a way as to do no harm in *dry* seasons; ridge cultivation may save the crop in dry, and destroy it in wet seasons.

My reviewer thinks ridged better in wet, and flat better in dry seasons—why not adopt this plausible plan? Other reasons exist, but for the present it is sufficient to say that it is not only impracticable, but under our present state of knowledge or foreknowledge, utterly impossible.

The only provision within our present state of knowledge against the contingency of dry or wet weather, (which we cannot foretell,) is *precedent thorough drainage*, followed by constant cultivation *flat as possible*.

If we neglect drainage and ridge for wet weather, and dry ensues, the crop is ruined. If the soil is retentive of water and we neglect drainage and flatly cultivate in anticipation of dry weather, and wet ensues, the crop will be drowned out, as in my reviewer's experiments.

We see, therefore, the importance of taking the theory as a whole; I do not mean to believe and blindly swallow all, good and bad, but, in order to a just criticism, to *consider* the whole together.

Of course every proposition, argument and illustration, when certain essential conditions have already been urged, as drainage, &c., must be construed as presuming those conditions to have been performed; otherwise all must be repeated with the different topics approached, till the burden to judicious readers would become intolerable.

Suppose a writer should describe the plan of heating a house, as the chimney, fire-place, or other appliances necessary for heating and protecting the rooms from fire and smoke, and in a subsequent chapter on the same subject, should suggest wood or coal fires in certain rooms, without *words* of reference to the appliances theretofore recommended for protection, and a novice were to read the latter and make the fire *on the floor*,—when the house burns down, which is guilty of the mistake, the reader or the writer?

My reviewer is "not sure that level cultivation will answer so well for all crops—sweet potatoes, for instance."

The papers in respect to cultivation have not yet reached the consideration of *special* crops. General crops only, raised in all parts of the countryhave hitherto been contemplated. The country has not yet suffered from ridging sweet potatoes, nor trenching and ridging celery, and the like. As no great loss is thought to result from the prevailing practice, although a different mode might be better, the subject will be postponed for the elimination of practices disastrous to the whole country.

But the True Theory *does* teach that if sweet potatoes, or any other plants, need more water than they get under the practice of ridging, it will be supplied by doing away with the ridges, and cultivating flat.

In reference to general crops the True Theory does not recognize conditions that cannot arise under the true practice.

So, if the owner of a soil, as well as nature, has failed to drain it, he has not practiced the true theory, and cannot reap its benefits in a maximum crop, in *any* season by *any* mode of cultivation. Having gone astray, he cannot succeed, and may, as did my reviewer, *lose by partial performance.*

I am charged with reporting experiments without stating the conditions, and the criticism is just, if true. It seems the "conditions" referred to must be in reference to drainage or the amount of rainfall, or both,—these being the conditions he reports. As to drainage, it must certainly have been attended to by a first-class "English farmer and gardener," especially as his work was approved by the writer, in the very paper criticised.

As to the weather, it could hardly have been more fully stated. With the report appears the following: "After one gathering of cucumbers, peas, &c., and the *dry season* set in, mine (the ridged plants) perished, while his (the flatly cultivated) continued to bloom and bear, &c. My potatoes made about half a crop of small tubers dug from dry hills, his yielded bounteously of large ones dug from moist earth at the same time in the same field. * * The hilled or ridged peas, beans, &c., fired early in the action and succumbed *to the drought.*"

The *gravamen* of complaint seems narrowed to a charge that I did not state conditions which blazed all through the report, and to guard against which the paper was written.

While my reviewer, with unusual clearness, accuracy and candor, explains the causes of the failure of his flat culture reconciling it with the true principle, and appears "almost persuaded," he inadvertently, it seems, or without mature reflection, makes a square issue with the fundamental teaching and very soul of the True Theory, as follows: "No general rule in farming can be made applicable to all cases."

The special mission of the True Theory is to discover and point out conditions *universally* applicable, and necessary to the growth of all plants under all conditions. Otherwise it would hardly be a subject capable of scientific treatment, and could only be learned empirically, or by scraps and recipes.

The third paragraph of the first paper of the series says: "In agriculture, as in other sciences, there are certain fundamental truths of universal application, and a departure in practice from any of these is fatal to success; * * such, for instance, as that *water, light, heat and food* are necessary for all crops under all circumstances; that there is a large inevitable waste of plant-food under any system of cultivation; and that, without restoration, the soil will become exhausted." This is the very foundation, length, breadth and height of the science.

The most economical means of administering in appropriate quantities, these necessaries of life, is the scope and the imperious dogma of the True Theory.

Everything done in compliance with these supreme demands, and *nothing else*, is right. Experiments made without reference, all and singular, to these fundamental and all-pervading laws, are in the dark, and cannot weigh a mite against those conducted in the light.

Now the cat is out, the room lighted, pardon universal, and *heretics* bid to understand and believe, (that they may not be dazzled into unseemly blunders,) and invited, thus prepared, to enter and receive the certain reward of intelligent labor.

This explanation is final, and leaves the True Theory in future to its own defense. If it fail now, to be justly read and tried, let it pass, enshrined in the volumes of the *American Farmer*, to the judgment of "other men and other times."

It is no trivial task to embody the present knowledge on the subject in a popular form even approximating system. Nor can all the precaution of which I am capable make it intelligible to mere casual readers.

I remember grappling with the abstruse learning of perhaps a less profound but far more advanced profession, when almost every alternate page seemed to "clash" with the other. But on a second or third reading, with less wearied mind, I was better enabled to view the subject from the standpoint of the author,—to grasp his views, to keep the course of his mind, and to comprehend the scope of the several propositions and their connection or severance, until what had appeared irreconcilable and absurd, heightened in interest as I advanced, and finally impressed itself as the grandest achievement of human intelligence; a system so profoundly connected that to comprehend a part it is necessary to grasp the whole.

It is impossible for what the author has been vain enough to style the "True Theory," to even resemble this, and perhaps it is as useful in its

feeble style, even were the author capable of greater force and method; but the day will come when such will be the *Science of Agriculture.*

For higher aims than mere criticism can frustrate, I wish I had many readers as unbiased and candid, and I might wish, a little more attentive than my polite reviewer. For his benefit and that of kindred spirits, I extract the following from the very reliable editors of that excellent weekly, the *Country Gentleman*, of September 6th, 1877, which came to hand during the writing of this:

"Experiments which we have performed in different years in hilling potatoes, and leaving the surface flat, long since published in the *Country Gentleman*, prove that the common practice of heaping up the earth around the hill usually diminishes the crop from fifteen to eighteen per cent. * * We observe that these experiments are corroborated, and published as new, in the report of the experiments on potatoes in Germany in the *London Agricultural Gazette.* It is stated that when the earth was heaped high against the plants the diminution was seven tons per acre, and when more moderate two tons per acre." L. H. McGINNIS.

*Shenandoah Co., Va.*

## Vinegar from Apple-Juice.

Among the many popular errors prevailing among farmers and others, that unripe, sour and rotten apples will make good vinegar is one that may be alluded to at the present time,—as many will soon be engaged in the business; and in doing so it may be proper to explain what is vinegar; source of it in the fruit; what is requisite to make good pickling vinegar, so as to preserve what is intended, &c. The primary source of vinegar is the starch of the fruit. This exists in the green, sour fruit, but is not soluble: hence in pressing you do not obtain it, but only a small portion which may possibly be converted to sugar. The acid of the fruit, no matter how sour it may be, has nothing at all to do with the formation of acetic acid; the base of vinegar on the contrary is destroyed by the fermentation of the juice. Now, to obtain the full capacity of the fruit the starch must pass to sugar, which it does in ripening; and the sugar being dissolved in the water of fruit, of course passes out under the pressure as sweetened water or cider, flavored with the apple. The next change taking place is the formation of alcohol, by the first or vinous fermentation, and is known as hard cider. At this point, if the cider contained enough sugar, it is in a fair way to make good, strong vinegar, by filling barrels about two-thirds full; bung out and hole covered with gauze, to keep flies, &c., out. To obtain a vinegar that can be depended upon to keep pickles the cider should certainly contain enough sugar to measure five to seven degrees by Baum's hydrometer for liquids heavier than water. This will make a vinegar containing 5 to 6 per cent. of acetic acid, neutralizing from 30 to 40 grains of super-carbonate soda, and if the pickles have been properly soaked in brine, so as to extract a portion of their water, to be replaced by the vinegar, they will certainly keep for a long time.

It is no uncommon thing to find in the market vinegar that is warranted made from pure cider, that does not contain 3 per cent. of acetic acid; not enough to prevent its own decay, much less pickles: hence how often parties lose them, as has often been the case with the writer, by depending upon what was supposed to be strong cider vinegar. Ninety-nine hundredths of the vinegar sold in this country is made from whiskey, by the quick process; but no matter what made from, the result is the same diluted acetic acid. Any farmer who has apples and a press can always have good vinegar by using ripe, sound apples. The rotten ones are good for nothing, as both the starch and sugar has been destroyed beyond redemption, and there is nothing in the juice to make vinegar. I am now speaking of vinegar for family use; what will sell as such I have nothing to say. Some use must be made of the unripe falling fruit: to juice obtained from such fruit a few pounds of sugar will insure good vinegar. A. P. SHARP.

*Baltimore, Sept.*, 1877.

## Our French Letter.

*Messrs. Editors American Farmer:*

### The Crops in France.

The vintage will be exceptionally good this year in France,—in point of quality rather than quantity; Burgundy will be more plentiful than Bordeaux. Grain, the harvesting of which will soon be finished, is estimated at a mean average year; the ears are not well-filled; there is much straw, and, in the northern parts of the country, the corn is largely laid. Hay is very abundant, and pressing machines are in much request to enable it to be sent to distant markets. However, many farmers intend keeping a portion of the abundant fodder in stock, to meet expected short supplies, which of late years are very frequent. The favorable harvest prospects have given an important impetus to the purchase of mowing, reaping and threshing machines. Implement manufacturers pleasantly complain that stocks in their warehouses are exhausted.

### Agricultural Machinery—A New Motor.

Thirty years ago not a farm in France possessed a steam engine. At the present moment all the threshing of grain is effected by machinery driven by portable engines,—so that grain, which could not be prepared for market in less than five or six months, can now be dressed and sold in as many days. In this country the employment of steam machinery is much restricted by the high price of coal; hence the importance of compressed air as a motive power, and also of the invention of a M. Boulet, which holds out sanguine hopes of realization. This gentleman exhibits daily in the city a combination of water and ordinary air, by means of which a go-and-come motion is produced. An india-rubber ball, filled with air and attached to the extremity of a metal tube, is immersed in water; the other extremity has a ball also, but devoid of air, over which floats a piece of wood with a heavy weight thereon; in the middle of a tube is a cock; this,

on being turned, permits the air from the submerged ball to pass into the empty one, and thus an up-and-down motion is produced of a permanent character, and varying in intensity with the volume of the balls and the depth to which they can be plunged. Engineers speak highly in favor of this revolution. A machine of twenty-horse power is in course of construction; if successful, agriculturists will have at their door a motive power, costing almost nothing, without danger of explosion or conflagration, and requiring no combustible.

**Honors to an Agriculturist.**

According to Cato, when the ancient Romans desired to pay the highest compliment to a citizen, they said, "He was a good agriculturist." This honor is peculiarly applicable to Mathieu de Dombasle, of Nancy, the pioneer of French scientific farmers. His native city has just honored his memory with a fête and a statue. Born in 1777, his reformation extended its influence over the early half of the present century. Up to 1789 the ancient governments of France struck agriculture with every discredit; nearly two-thirds of the land were held in mortmain; the remaining third, owned and tilled by the people, was crushed by a multitude of feudal rights and partial taxes; even cattle and ordinary agricultural implements were subjected to imposts. Ignorant agents prohibited any rotating of crops, as an attack against the production of the principal source of food—wheat. M. de Dombasle commenced by studying every known treatise on scientific and improved agriculture. In 1810 he established the first beet-sugar factory in France; then he instituted ploughing matches; founded agricultural shows and clubs; corresponded with eminent farmers everywhere; composed a "calendar" of agricultural operations, which is still considered as a classic. To these good works must be added his model farm, where not only new systems of cultivation were practised, but improved implements introduced.

**Food for Omnibus Horses.**

The Omnibus Company of Paris (a monopoly) employs 10,000 horses; one centime more or less in their feeding represents an annual loss or gain of fr. 36,000. The Company has published the full details of its experiments, extending over a period of two years, with maize as a partial substitute for oats. The London Company of Omnibuses had adopted the plan, but the work for the horses in the two capitals is far from being the same. The horses first selected for experiment numbered 16, and were employed in general carting work. They were aged from 6 to 16 years, and were periodically weighed during the period the experiment continued, from 24th November to 24th March following. The maize chosen was that grown in Burgundy, Russia, and the United States. This order of enumeration represents also the nutritive value of the corn. The ration of hay, straw and bran was not changed; the object was to replace a daily feed of 19 lbs. of oats by the same weight of maize, diminishing one and increasing the other at the rate of 2 lbs. weekly. The maize was crushed (the sole form in which it ought to be given) and was the product of the preceding harvest—a point never to be overlooked. The horses at first refused the maize, but ultimately took to it. A little sea-salt added to the feed enabled the animals to conquer their repugnance —the latter in some instances continuing as long as five or six months. The horses showed no falling off in the way of work; but they displayed less energy or fire. It was definitely ascertained that 11 lbs. of oats and 7 of maize were the safe proportions for the new feed of grain. Extended thus to horses actually employed in bus work, the results were the same as in the first experiment, and so satisfactory that the regimen has been permanently adopted, and thus economizes for the Company nearly half a million of francs per year. Of the horses purchased to keep up the Company's stock 30 per cent. die; this is the penalty young animals pay during their acclimatization. Some of this mortality must be attributed to intestinal affections, such as colic. At several dépôts no cases of indigestion occurred from the use of maize, and a horse having a tendency to such was cured by mixing a little sea-salt with the feed. The horses are in excellent condition and do their work well; they display less ardor, do not neigh so frequently, consuming less of the exciting matter of the oats. The drivers complain they cannot "show the horses off so well." It would be desirable that the Cab Company of Paris try the same experiment.

**Food for Horses and Cows.**

If the plan is adopted for feeding horses on biscuit, as now in operation with the Russian cavalry, an important step will be made in the preparation of cattle food generally. The biscuits are composed of crushed oats, pea meal, hemp oil and salt; they are ten inches in diameter, are perforated, and when baked are placed in deal boxes, the layers being powdered with bran; four biscuits are strung together on a piece of wire; these constitute a ration, and are equivalent to 10 lbs. of oats; the biscuits can be either given dry or steeped in water; the horses become thin on the diet, but do not lose vigor.

At Hohenheim, Messrs. Wolff & Fleischer have undertaken some very curious experiments on the influence of food upon the production of milk. After calving, the quantity of milk secreted is most plentiful; then, after a period more or less long, this quantity diminishes. By feeding two cows, Swiss breed, and weighing each 10 cwts., on clover-hay, crushed barley and beet; and later, on green clover-hay, crushed beans and barley; the increase of milk was proportionate to the quality of food. But it was demonstrated at the same time that a cow not possessing milking qualities naturally yielded no proportionate increase of milk from an augmentation of food. The quality of milk is less influenced by the feeding than the quantity; by quality is understood its chemical composition, irrespective of flavor or aroma. The proportion of serum, as compared with fat, caseine, sugar and mineral substances will be augmented, but not the other ingredients. In other words, a farmer cannot, by a system of feeding, make a butter or a cheese-producing cow, and reciprocally. This curious fact can be explained by physiology. Milk, as was for a long time supposed, is not a secretion of the blood, where the mammals play the

role of a simple filter; it is a secretion of a special organ. Milk, in a word, is the substance of the mammals in a liquid state. The intensity of the secretion depends on the development of the organ; that is to say, of race, of a property natural to the animals, and independent of food. The albumen of the latter is transformed into butter, or fatty matter, by the cells of the mammal; the part not transformed remains in the milk as albumen or caseine.

**Miscellaneous Items.**

When pure butter is examined by the microscope or a good magnifying glass, it will be found to consist of an assemblage of uniform globules; if among these globules crystalline masses or stars be found it is proof that the butter is adulterated with margarine.

The entrails of cattle, putrid fish, dead dogs, &c., if placed on the exposed roots of apple trees in February, and covered in, will effectually destroy the "wool bug" peculiar to these trees. Cannot the remedy be tried against the phylloxera?

In Belgium, cess-pool matters, called "Flemish manure," if applied in winter on meadow land, will destroy moss and weeds. It is bad for sugar-beet, but excellent for cattle mangolds. Coating with "pine oil" is fast superseding paint for the wood-work of tools, machinery, sheds, &c. F. C.

*Paris, September*, 1877

## Proper Care of Sheep.

*Messrs. Editors American Farmer:*

The proper care of sheep is a very important subject for consideration by the wool-grower as well as the sheep-breeder. The wool-grower should take proper care of his sheep, for without, he cannot have the trueness and strength of staple so desirable. When sheep are thin and begin to thrive there is a joint or break in the wool, which decreases its value. It requires good care taken of ewes to raise the greatest percentage of lambs. The wool-grower wants to improve his flocks, as they will be more salable for mutton or other purposes, and give him a greater weight of fleece. It requires that the sheep-breeder take the proper care of his flocks. He may go to the best flocks in the country, may buy his choice, and if they are not well fed and the best care taken of them they will soon be comparatively worthless. The proper care includes feeding, breeding and the general management of sheep. All of the great improvers of stock were extra good feeders, and gave their stock particular attention,—which shows that good feeding as well as good breeding, and housing from cold wet storms, are necessary to attain the highest development. It is desirable that every flock master should have one sheep-house or room properly ventilated, but fixed so it can almost be made air-tight, for lambs to come in. After the lambs are 3 or 4 weeks old they can be shifted to other quarters, and give place to other ewes which are about to lamb. By having an arrangement of this kind a large number of ewes can be had to lamb in the same house.

Excessive care is not requisite with strong hardy ewes in lambing, and too much interference is not desirable. It is well to look into the sheep-house the last thing before going to bed, and if all is well the sheep should be left undisturbed until morning. The Merino ewe rarely requires mechanical assistance in lambing, and where the presentation of the lamb is natural there should be no interference on the part of the shepherd. Lambs should be weaned at about four months old, as it is better for them and for their dams. Some wean when the *sign* is in the thighs and going down. I give it for what it is worth.

The lambs, as soon as they are taken from their mothers, should be turned in some distant field, so far away as to be out of hearing of the ewes; as they will not be so restless, and will not be so apt to crawl through fences, which is a bad habit when once learned. Two or three old tame ewes are turned with them to teach them to come at the call, to find salt, and to eat grain out of the troughs. The lambs should be turned on the freshest and tenderest grass. This is also a good time to commence feeding them a little grain. The old ewes should be turned on short dry feed, to stop the flow of milk. Their udders are to be looked at every two or three days, to see that none of them become distended and spoil. By drawing the milk a few times there will be no further trouble in this respect. It is profitable to begin feeding all sheep some grain after the first few frosts, as the grass is not so nutritious. Lambs can be learned to eat by sprinkling a little salt over their grain, and not salting in the field. Their feed should be increased a little as winter approaches. Sheep, and especially breeding-ewes, are healthier if they have plenty of exercise during the winter. That would be an objection to yard-feeding. Air, light and sunshine are conducive to the health of sheep—the same as of other animals. The proper care of sheep during winter is feeding them well and regularly, and salting them once or twice a week, and by having plenty of fresh water for them to drink, and that the same amount of feed is given to them each time. Sheep should be fed, when at full feed, about one-half bushel of shelled corn per hundred, or its equivalent in some other grain. During winter sheep should be put up at night with their racks filled with hay; in the morning turn them out on some kind of roughness, as corn fodder or sheaf oats. Their grain can be fed to them either in the morning or evening, it makes no difference which, so it be at a certain hour. Salt is as essential in winter as at any other time. If water is not furnished them, no matter how well they are attended to, they will not thrive, will tuck up and look hollow.

Flocks should be divided so as to have about one hundred together. It is best to winter lambs by themselves, yearlings by themselves, and breeding-ewes separate. Rams should not be allowed to run with the ewes during winter.

It cannot be too strongly enforced that gentleness in every manipulation and movement connected with sheep is the first and one of the main conditions of success in managing a flock of sheep. They should be taught to fear no injury from man. They should be made tame,

and even affectionate,—so that they will follow their keeper about the field, and so that, in the barn, they will scarcely rise to get out of the way. Wild sheep are constantly suffering some loss or deprivation themselves, and constantly occasioning some annoyance or damage to their owner; and under the modern system of winter stable-management, it is difficult to get them through yeaning season with safety to their lambs. Sheep's feet should be trimmed about twice a year, or at least their feet ought to be examined that often to see if any need trimming. Trimming their feet at some wet time is the best, as their hoofs are softer.

After the fresh grass starts vigorously in the spring, sheep are apt to purge or scour. The wool about and below the vent becomes covered with dung, which dries into hard knobs if the scouring ceases; otherwise it accumulates in a filthy mass, which is unsightly, unhealthy, and to a certain degree dangerous; for maggots are not unfrequently generated under it. Tagging sheep before they are let out to grass prevents this. This is cutting away the wool around the vent and from the roots of the tail, down the inside of the thigh; this should also be done twice a year.

There is nothing peculiar in the summer management of sheep more than that they should be salted regularly, have some shade to go under during the heat of the day, and have access to water. But, to secure constant improvement in a flock of sheep, as well as to remove all animals from it which are defective, it is necessary annually to draft the flock: that is, exclude from it all animals which fall below a certain standard of excellence. The leading defects to be had in view of drafting are, first, the general ones of a want of the requisite degree of perfection in the form and fleece, judged by the existing standard of the flock. Breeding-ewes, like store sheep, are only required to be kept in good, plump condition. Sheep should be marked with the initials of your name if they are not tabbed and registered. If there is one rule which may be considered more imperative than any other in sheep husbandry, it is that the utmost regularity be preserved in feeding. First, there should be regularity as to the times of feeding, and as to the amount fed. For when a flock is fed sometimes at one hour, sometimes at another,—at one time fed so much, at another a different quantity,—they cannot be made to thrive. They will do far better on inferior keep if fed with strict regularity. Unlike cattle and horses, sheep do not eat well in the dark, and, therefore, they should have time to consume their feed before night sets in. Sheep do not do well fed with cattle, horses or hogs. Cattle hook them, horses kick and bite them, and hogs will pull their wool from them, and if they once get a taste of sheep they will often kill and eat them.

Most any kind of a fence will turn Merino sheep if they have never been learned the bad habit of jumping. They will always pay for their keep and increase the crops of grain by manuring the ground; will eradicate weeds, and, to a certain extent, briars and bushes.

W. C. RIDGELY.

*Bethany, Brooke Co., W. Va.*

## The Importance of Comfortable Quarters for Stock.

*Editors American Farmer:*

This cool rainy day and the approaching winter winds remind me of former times some ten years ago; of the scenes witnessed on the farm then just purchased; for it was a miserable old building called a barn, with no doors, and plenty of other openings for the beating snows, sleety rains and cold north winds to howl through and soak the poor stock, whose only bed was a puddle of their own urine to sleep in, on a scanty supper of dry fodder and straw; and how often do we find on farms in such weather poor thin cows drawn up and trembling with cold, behind some old shed or straw stack, with no covering but the canopy of heaven to protect them from the pouring rains, freezing sleet, beating snows and shivering winds. Such a condition of affairs should never be found on any farm—humanity calls for different treatment, and I feel sure if every one could appreciate the importance of having good, dry, warm quarters for their stock, such sights would seldom meet the eye; on the contrary every one would use a grand effort at economy, to save enough to build something in the shape of a house for their protection. I know of no better investment on a farm; it will pay double interest in the shape of good milk and butter, and saving of food. Yet I am well aware that many will visit the city and spend enough for swill slop, or the next thing to it: lager beer, rot-gut whiskey, segars, &c., &c., that would buy enough plank to at least build a shed for one cow. This is plain talk, yet too true. My first effort at the time alluded to above was to raise something for them to eat; and next, to have a good, dry, warm place to eat it, and protect the same from beating rains.

It is no little satisfaction, this rainy night, to know that I can retire to my comfortable bed and know that my horses, cows, hogs, chickens, and even dogs, are my equals in this respect. A good dry stall for every head is provided for their use, and a well-filled barn of timothy hay arouses their affection for their home; and their owner only feels as if he had done his duty, and no more—"nothing more"—and the award is plenty of pure, healthy, nutritious milk, kind, gentle horses, supply of eggs and fat chickens, good calves in the spring; and last, a glorious, hearty and sincere welcome from my Newfoundland, bay-shore and coach dogs, who leap with joy at the sound of a gentle word to them.

It is truly wonderful what gentleness will do towards making quiet, easily broken and knowing horses, by commencing with colts, and treating them as one of your family. Two colts broken this spring are more like old horses. They seem to learn what you desire of them, and are willing to do their best to win your continual kindness. Much can be done by having comfortable quarters, kind words, and, last but not least, desirable food for the inner horse. I say to all who think the above worth reading, try the experiment; build good stabling, save your *extras* and the reward will surely come, and sooner than expected, in the satisfaction of knowing you have done your duty. Now is the time

to commence the experiment—delays are dangerous. A bushel of corn worth fifty cents properly fed as chop with cut hay will produce four times as much in the shape of milk and butter, with manure to help make another crop, instead of taking most of the corn and wheat money to often buy worthless fertilizers palmed on the farmers by prowling drummers, who profess to know just what they want. I have nothing to say against the many honest and correct dealers in them; but must raise a voice sounding the word, beware of stuff you know nothing about. Now is the time to erect a manure shed; a few posts and rails covered with your cut-off corn will protect it from the washing rains, and give it a chance to pass into a condition of plant food, by hauling-out time in the spring, and save much labor and expense in hauling water and unrotted corn-stalks, straw, &c. A. P. SHARP.

*Baltimore, September*, 1877.

## Work for the Month—October.

The preparation for future crops and the securing of those already made now fully occupy the time and attention of the farmer, and the making ready for winter requires that every duty offering shall be carefully and zealously performed.

**Wheat.**—Where not seeded, the crop should be gotten in as soon as possible, that the full growth of the plant with its corresponding development of roots may not fail to be made. This gives strength to the plant to resist the fly, helps it to tiller better, and strengthens it to resist the variations of winter weather. The desirability of sowing at the earliest moment should not excuse any lack of thoroughness in preparing the land. This is paramount to all other considerations in making ready for the wheat crop. Where seeding is delayed a dressing of some nitrogenous manure is more than ever desirable, that the delay in starting the crop may be compensated for by the stimulating influence of a moderate amount of Peruvian guano, fish manure, or similar ingredients, which may be added to the fertilizer used, where it is not very highly ammoniated.

**Rye** ought to have been in, and where not sown should go into the ground as soon as possible. This crop is too often left to shift for itself. A little good fertilizer, or a more than usually liberal application of home-made manure, will pay.

**Timothy** seed should be sown immediately after if not with the wheat or rye. A peck of seed to the acre is enough, and it is useful to follow the seed with the roller.

**Tobacco.**—There ought to be no delays in getting all of the crop safely housed. In good dry weather that in the house should have all the sun and air possible.

**Potatoes.**—The late crop should be dug in good weather, allowed to lie long enough to dry off, and then be taken at once to the cellar.

**Roots and Pumpkins** ought to be stored away before frost injures them. Be careful not to allow the roots to be bruised in digging and handling, as bruises result in decay. Pumpkins ought to be fed out first.

**Fall Plowing**, except in soils of very light texture, is usually to be commended. The influence of variations in temperature is to break down the stiff soils, and thus make them easier to work, while at the same time the elements of plant food they contain are better fitted for assimilation.

**Lime** may be applied with benefit now, and its effect is perceived sooner than when put in at any other season. Don't plow it under.

**Muck** may often be dug at this season to great advantage. It is an excellent absorbent for use in the stables, and useful to add to the compost heap.

**Draining** may frequently be very well done now where needed. Be careful that in all grain fields the water furrows are properly laid off and kept clean.

**Live Stock.**—*Fattening Hogs* ought soon to be put into their pens, the early fall being the best time to have them begin to lay on their fat. Those who delay till severe weather will find that a much larger quantity of corn is required than would have been earlier. Keep their pens dry and comfortable with an abundance of absorbing materials, which should be replaced by fresh as soon as saturated with excrements. When first put up give your hogs at intervals of two or three days several doses of sulphur, and afterwards an occasional handful of charcoal or ashes, lime and salt mixed. Pumpkins and other soft food should be given first, and then corn. *Beef Cattle and Sheep* should be pushed vigorously ahead. Give *milch cows* some extra rations as the pastures grow poor. Do not let *young stock* run down. By being well summered they are half wintered.

## Poultry Yard.

By G. O. BROWN, Montvue Poultry Yards, Brooklandville, Baltimore County, Md.

### Aylesbury Ducks.

This handsome breed of aquatic birds originated in Buckinghamshire, England, and has been peculiar to that neighborhood, even longer than the oldest inhabitant can remember. No variety of ducks are so extensively reared throughout Europe, and are rapidly finding their way to the poultry yards in this country. No variety of ducks are more easily acclimatized, and are sure to thrive where others would not succeed at all. The Aylesbury ducks are wonderfully hardy, large, and noted for their rapid development to maturity. From some unexplained reason, (even when carefully fed on the regular food,) the eggs vary greatly in color; some being white while others will be a bright green or cream color. It is thought by some that the sex of the progeny has something to do with the color of the eggs; but such is *not* the case. Enormous traffic in these ducks annually occur in the vicinity of London; the bulk of the rearing being done by the "cottagers," many of whom make this their special business. From this immediate neighborhood, (the county town of Buckinghamshire,) upwards of £20,000, or in our money *one hundred thousand dollars*, a year

is returned for this breed of ducks. It is a novel sight to visit the cottages of these "duckers," as they are called, in the height of the "season;" for the young ducklings have possession of every room in the house, neither the kitchen nor bedroom escaping. Rarely, if ever, do they leave the house until carried out to market, which is from 6 to 8 weeks. They are *not* allowed to go into water. The food for the young is, at first, hard boiled eggs, finely chopped, mixed with boiled rice, which is given several times per day, and is followed by barley-meal and tallow greaves, mixed with the water in which the latter are boiled. In this country coarse ground meal (corn) scalded answers the place of the barley. Ducks, not reared for market, are raised in the usual hardy manner. They are pure white, and, with ordinary care only, should weigh, at twelve months old, thirteen to fifteen pounds the pair. Ducks not intended for market purposes should have access to water, after six weeks old, at their pleasure. Miss Mary Seamons (England) was for many years the leading breeder and most successful exhibitor. The finest specimens I have yet seen in this country, I saw at the yard of J. T. Bicknell, Esq., Buffalo, N. Y., who deserves great credit for the attention he has devoted to further perfecting the good qualities of this excellent breed. Birds examined at his yards outweighed considerably the Pekin ducks, which are claimed to be the largest ducks there are. *They are* the largest in appearance, the feathers being more of a fluffy nature than the Aylesburys. Besides the Pekins there are the Black Cayugas, Muscovy, East Indian, Call, Crested, &c., all of which we shall have to consider in another article.

**Now**

Farmers should select what fowls they intend to breed from next spring: separate them from those intended for the market. Much can be accomplished towards improving the flock by proper selection. Keep the best of the last spring's pullets, selling off all (except a few for setters) of the hens. In selecting the pullets, pick out those with broad backs, full breasts and short legs. If eggs are principally desired, secure a throughbred Leghorn cock. If eggs and table fowl are desired, cross with Houdan or P. Cochin cocks. The above is intended for farmers who have not already seen the policy of securing *nothing* but *pure* bred poultry,—knowing that their *experience*, if the above suggestions are followed, will be so satisfactory that they will be anxious to enjoy the profit of pure bred poultry. The hen-houses should be carefully examined, stopping up the cracks where draughts would pass through, leaks in the roof, in fact giving general attention to all repairs and see that everything is made clean. The trouble will be paid for in winter with eggs, and at a time when the price per dozen makes it an object to market them. Fowls, well housed and protected from the cold winds and rains of autumn, are as profitable again as those not properly taken care of. I know of nothing that is more valuable for the amount invested, to the farmer, than poultry *properly* cared for. Their guano alone is worth their keep. They return their full price value annually in eggs, and supply the table with palatable, nourishing food.

# *Horticulture.*

## Meetings, &c., of the Pomological Society.

The business sessions were held in the Concert Hall of the Academy of Music, three blocks from the place of the exhibition. In the absence of President Wilder, C. M. Hovey, presided; W. C. Flagg, secretary.

On assembling on the 12th, Wm. H. Perot, President of the Maryland Horticultural Society, in a short address, bade the members of and delegates to the Pomological Society welcome to our city and State, and Mr. Hovey responded in appropriate terms. Credentials of delegates were then received, committees appointed, and the address of the absent president read by the secretary. The place of the next biennial meeting was fixed for Nashville.

The former officers of the society were all reelected, and we give a list below.

The second day's sessions were devoted to corrections and changes in the society's catalogue.

On Friday the visitors, by invitation of the Maryland Society, paid a visit to the farms of Col. Edward Wilkins in Kent, the steamer Pentz having been chartered for the occasion. An opportunity was given them to see something of the "peach country," the orchards of Col. Wilkins and some of his neighbors being visited, as well as the pear orchard of Captain R. S. Emory.

The company was hospitably received and entertained by Col. W., and on the homeward trip a collation was furnished. There were no formalties or speeches, and the excursion is said to have been an agreeable one to all who participated, and thus saw one of the principal horticultural features of this section.

On Thursday invitations were extended to all who desired to do so to visit Druid Hill Park, and a large number of the visitors took carriages and drove through that ample pleasure ground; and on Saturday a number who remained in the city were entertained by President Perot at his place on Charles-street avenue. The closeness with which the society kept to its business, and the fact that the trip to the Eastern Shore consumed one entire day, prevented some other attentions being shown our guests as intended, such as a view of Patterson and Clifton Parks, an inspection of one of the most extensive of our fruit-packing establishments, in accordance with an invitation from its proprietors, &c.

### A BUSINESS MEETING.

A business meeting of the Pomological Society was held on the Pentz during the return trip, and various matters were transacted to close the biennial session. Dr. Warder, of Ohio, presided, and Mr. Flagg, of Illinois, was Secretary. The question of the nature and remedy of blight in pears was discussed at length by A. J. Caywood, of New York; Prof. Brainard, of Washington; Dr. Hexamer, of New Jersey; Mr. Moody, of New York; Mr. Hatfield, of Massachusetts; Mr. Augur, of Connecticut; Dr. Snodgrass, of Maryland; Dr. Howsley, of Virginia, and Thomas

Meehan, of Philadelphia. Mr. Meehan's clear and comprehensive remarks on the subject were applauded. The question whether or not the early Kent gooseberry is the same as the Houghton was also discussed by W. F. Massey, of Waverly, Md., and Dr. Hexamer, of New York, but the matter was not settled. They have points in common, and may be nearly akin. Col. Brackett, of Iowa, offered resolutions thanking the Maryland Society, Col. Wilkins, Mr. Pentland, Col. Coleman of the Carrollton Hotel, and others, for courtesies and attentions to the Society.

THE WILDER MEDALS.

Before adjourning the committee on awarding Wilder medals to exhibitors made the following report:

The committee on the award of Wilder medals report as follows: Your committee for awarding the Wilder medals report that they have made the following awards of silver medals, the objects exhibited being all deemed worthy of that distinction: To the Maryland Horticultural Society for general display; Eastern Experimental Farm of Chester county, Pa., for general collection of fruits; Ellwanger & Barry, Rochester, N. Y., for collection of 166 varieties of pears, 60 of plums and 25 of grapes; to Franklin Davis & Co., of Richmond, Va., for general collection of fruits; to Hovey & Co., of Boston, Mass., for collection of 120 varieties of pears; to Benj. T. Smith, of Cambridge, Mass., for collection of 82 varieties of pears; to John Saul, of Washington, for collection of 200 varieties of pears; to the Connecticut State Board of Agriculture, for general collection of pears, apples and grapes; to Nathaniel Atkinson, of North Carolina, for collection of 108 varieties of apples; to G. F. B. Leighton, of Norfolk, Va., for collection of pears; to R. S. Emory, of Chestertown, Md., for collection of twenty-one varieties of pears; to J. L. Babcock, of Norfolk, Va., for Bartlett, Duchess and Seckel pears; to W. B. Weeks, of Norfolk, Va., for collection of pears; to Mrs. F. A. Hudgins for four varieties of pears; to A. H. Page, of Virginia, for collection of pears; to Wm. Faltz, of Virginia, for pears; to Wm. T. Walters, for exotic grapes; to Jas. H. Ricketts, of New York, for exotic seedling grapes; to Henry E. Hooker, of Rochester, New York, for Brighton grapes; and to S. T. Jenkins, of Georgia, for apples.

The report is signed by W. L. Schaffer, of Philadelphia; Elisha Moody, of Lockport, New York; A. W. Harrison, of Philadelphia; Wm. Watson, of Texas, and B. F. Transon, of Humbolt, Tennessee.

The meeting then adjourned *sine die*, after some fitting remarks by Dr. Warder.

ELECTION OF OFFICERS.

The committee on credentials having reported, the following officers were elected: President, Hon. M. P. Wilder, Boston, Mass.; Vice Presidents, C. C. Langdon, Alabama; A. P. R. Spafford, Arizona; C. C. Bliss, Arkansas; B. S. Fox, California; N. C. Meeker, Colorado; D. S. Dewey, Connecticut; Wm. Saunders, District of Columbia; W. H. Drake, Idaho; Arthur Bryant, Sr., Illinois; S. Johnson, Indiana; J. S. Stayman, Kansas; R. H. Day, Louisiana; Z. A. Gilbert, Maine; W. D. Brackenridge, Maryland; C. M. Hovey, Massachusetts; T. T. Lyon, Michigan; J. S. Harris, Minnesota; R. W. Furras, Nebraska; L. R. Bradley, Nevada; Judge Wilmot, New Brunswick; Wm. Parry, New Jersey; W. F. M. Arny, New Mexico; Charles Downing, New York; W. L. Steele, North Carolina; C. C. Hamilton, Nova Scotia; John A. Warder, Ohio; Robert Burnett, Ontario; Robt. Buist, Sr., Pennsylvania; Judge Dunkin, Quebec; Silas Moore, Rhode Island; A. P. Wylie, South Carolina; B. F. Transon, Tennessee; J. E. Johnson, Utah; G. F. B. Leighton, Virginia; Washington Blum, Washington Territory; Geo. F. Peffer, Wisconsin; Judge Carter, Wyoming; C. F. Trowbridge, Connecticut; Edward Tatnall, Delaware; J. M. Stubbins, Georgia; James Smith, Iowa; Thos. S. Kennedy, Kentucky; George Houseman, Missouri; Waterman Smith, New Hampshire; Wm. Watson, Texas; H. H. Strother, West Virginia; H. L. Hart, Florida; John A. Foreman, Indian Territory; A. J. Dufur, Oregon, and John Jones, Montana; Treasurer, Thos. P. James; Secretary, W. C. Flagg.

## The Horticultural and Pomological Displays.

The scene at the opening of the joint exhibition of the Maryland Horticultural and American Pomological Societies in the spacious Armory of the 5th Regiment, with its extensive annexes, was one which, if many of our visitors from abroad were not flatterers, has seldom been surpassed in this country either in extent, general effect or the beauty of the separate departments.

The main hall, a handsome room 95 by 135 feet in dimensions, effectively decorated by evergreen wreathing, hanging baskets, flags, &c., was given up to the fruit from abroad, except continuous tables on either side of the main walk the whole length of the hall, which were filled with plants of graceful form and striking foliage. At the termination of this walk was a rockwork constructed and effectively filled with plants and vines. Two wings, each 40 by 180 feet, accommodated the bulk of the plants entered for competition,—the western containing also the vegetables, and the eastern the cut flowers and designs. In both these divisions the display was far less satisfactory than usual, in consequence of the drought which had prevailed for several weeks. In fruits, too, the Maryland display was hardly as creditable as could have been wished, this not being a propitious season for any kind.

The show of plants was exceptionally good, both in the professional and amateur classes, the various exhibits being almost universally of kinds admirably adapted to exhibition purposes and showing careful and skilful cultivation. This was, indeed, so generally true, that the experienced judges had no little trouble in arriving at conclusions as to the respective merits of the competing entries.

It will not be out of place here to allude to the satisfaction the managers felt at the character and distinguished skill of the gentlemen who served on the awarding committees at this exhibition. On plants the judges were Robert Scott, of Philadelphia; Peter Henderson and

Isaac Buchanan, of New York; Wm. R. Smith, of Washington; Wm. Fowler and Wm. Fraser, of Baltimore. On cut flowers the chairman was Wm. Saunders, of Washington. On floral designs, James Ritchie, of Philadelphia. The discrimination of these gentlemen gave the awards double significance and value.

The fruits from other States were not as numerous as anticipated. Our home society, hopeful of and expecting an immense display, had made larger preparations than were demanded. The Western States were conspicuously unrepresented, and the date of the meeting was too late for the States south of Virginia and South Carolina,—Georgia having but one dish of apples, and Dr. Wylie, of South Carolina, one of apples, (Southern Porter,) and one of a new peach (Annie Wylie.) In all there were about 4,000 dishes of fruit.

Amongst the most prominent and interesting exhibits were those of President Wilder, of 320 varieties of pears; Ellwanger & Barry, Rochester, N. Y., of 166 varieties of pears, 60 of plums, and 25 of grapes; John Saul, Washington, 200 kinds of pears; Hovey & Co., Boston, 120 varieties of pears; B. G. Smith, Cambridge, Mass., 82 varieties pears; G. F. B. Leighton, Duchess, Bartlett and Seckel pears (from Norfolk and Princess Ann Counties, Va.) of great size and beauty; J. H. Ricketts, Newburg, N. Y., 64 kinds hardy grapes of his own origination and 1 exotic variety; Franklin Davis & Co., Richmond, Va., a magnificent collection of Virginia fruits, handsome in color, size and condition, and comprising also 100 kinds of apples from Capt. Natt. Atkinson, of Asheville, N. C.; the Eastern Pennsylvania Experiment Farm had 130 kinds of apples; the Connecticut Board of Agriculture, a fine lot of apples and pears; J. Fitz, of Albemarle, Va., fine specimens of fall Pippins; H. E. Hooker, of Rochester, N. Y., showed fine specimens of his Brighton grape, as did Capt. J. B. Moore, of Concord, Mass., of his Moore's Early; and A. J. Caywood, Poughkeepsie, N. Y., of his new white Duchess grape.

Among the Maryland fruit the pears of R. S. Emory, of Kent, and the foreign grapes of Wm. T. Walters, of Baltimore, were conspicuous for their handsome appearance, and each received a *silver* Wilder medal from the Committee of the Pomological Society; both gentlemen taking also all the first prizes in their respective classes. In peaches and apples Mr. J. W. Kerr, of Caroline Co., took both first prizes; but Mr. J. W. Porter, of Albemarle, stepped in and carried off the Maryland prize for his Virginia apples, for the best and largest collection.

The attendance upon the exhibition was good, although during three evenings of its continuance the weather was either threatening or actually rainy. The great space afforded by the addition to the armory of the capacious temporary wings, gave ample accommodations for the displays, and, as almost all were to be seen at a glance, (the windows having been removed and a number of the openings converted into doorways,) a very favorable impression was made on visitors, who wandered with delight amongst the stately plants, lingered around the fountains and rockery, or inspected the luscious fruits and comely vegetables.

AWARDS.

*Plants—Class I—Professional List.*

Best collection of 12 distinct plants; $5, James Pentland, for Dracæna Draco, D. indivisa, Cycus revoluta, Philodendron pertuosum, Ficus Parcelli, Cyanophyllum magnificum, Sphærogyne latifolia, Anthurium grandis, Campsidium filicifolium, Alocasia macrorhiza var., Strelitzia regina, Yucca aloifolia var. For second best collection, $3, John Saul, Washington, D. C., for Maranta tubispatha, Paullinia thalictrifolia, Dieffenbachia Bowmanni, Anthurium regale, A. magnificum, Alocasia mac. variegata, A. Zebrina, A. Loweii, Cyanophyllum spectandum, Ficus Parcelli, Pandanus Veitchii, P. Jav. variegata.

Best single specimen plant, not variegated, $3, John Saul, for Sphærogyne latifolia; second best do., $2, John Feast.

Best variegated foliage plants, 12 distinct varieties, $5, John Saul, for Maranta regalis, Pandanus Veitchii, P. Javanicus variegata, Dracæna Baptistii, Diffenbachia bausei, Alocacia mac. variegata, Aralia Guilfoylei, Ophiopogan robusta, Ficus Parcelli, Croton variegatum rubrum, Phormium Veitchii, Sanchezia nobilis variegata.

Second best do., $3, Archibald Brackenridge, for Pandanus Veitchii, Maranta Makoyana, Alocasia Veitchii, A. Violacea, Fittonia argyronium, Yucca bicolor, Ficus Parcelli, Phormium Colensii, Maranta zebrina, Pandanus Javanicus variegata, Anthurium magnificum.

Best single specimens variegated foliage plant, $3, Robert J. Halliday, for Dracæna amabile; second best do., $2, John Saul, for Phormium Colensii variegatum.

Best 12 Caladiums, $3, A. Brackenridge; second best do., $2, John Saul, for Princess Teck, Princess Alexandra, Duc de Nassau, Prince Albert Edward, Reine Victoria, Baron de Rothchild, Lucy, Mrs. Alfred Maine, Napoleon 3d, Dr. Lindley, Houlletii, Laingi.

Best 6 Coleus, $2, W. F. Massey; second best do., $1, John Feast.

Best 12 Ferns, $4, James Pentland, for Adiantum cuneatum, A. amabile, A. Martinicense, A. chilense, A. formosum, A. Farleyense, Gymnogramma Tartarica, Lastrea recedens, Woodwardia orientalis, Lygodium scandens, Lastrea patens, Pteris argyrea; second best do., $3, Archibald Brackenridge, for Dicksonia antarctica, Alsophilia australis, Adiantum amabile, A. Farleyense, Pteris argyrea, Asplenium nidus, Gymnogramma amabile, G. peruviana, Sitolobium Cicutarium, cibotium glaucum, Cyathea Smithii, Nephrodium molle corymbifolium.

Best specimens Tree Fern, $5, James Pentland, for Alsophyla australis.

Best 6 Lycopods and Selaginellas, $3, R. J. Halliday, for Scottii, densa, denticulata, casicisum, cordifolia, compacta.

Second best do., $1, A. Brackenridge, for Rubicaneis, denticulata aurea, Martiensi var., cuspidata, cæsea arborea, Poulteri.

Best 6 Crotons, $3, John Saul, for Angustifolium, Variegatum rubrum, Varietum elegans, Johannis, Weismanni, Longifolium; second best do., $2, James Pentland.

Best single specimen Croton, $3, John Saul, for Picta.

Best 6 foliage Begonias, $2, J. Saul, for Victor Lemoine, Rex, Philadelphicum, Mrs. Lowe, Marshallii, The O'Donohue; second best do, $1, W. F. Massey, for Margo, Queen of Hanover, Mad. Pereire, The O'Donohue, Roi Leopold, Louise Schneider.

Best 6 Dracœnas, $3, John Saul, for Terminalis stricta, Baptistii, Shepherdi, Braziliensis, Regina, Hendersoni; second best do., $2, Archibald Brackenridge, for amabilis, Shepherdi, Youngii, Regina, Guilfoylei, Terminalis.

Best 6 Palms, $4, A. Brackenridge, for Latania borbonica, Corypha australis, Chamœrops tomentosa, Cocos australis, Sabal umbraculifera Phœnix sylvestris; second best do., $2, Andrew L. Black, for Areca aurea, Latania borbonica, Chamœrops excelsa, Corypha australis, Phœnix dactilifera, Brahea filamentosa.

Best 6 Agaves, $2, A. Brackenridge, for Millerii, Americana var., Hasselofia, Species from Cuba, Sisaland, Antolarum; second best do., $1, John Feast.

Best 20 succulent plants (Agaves not included) $2, John Feast; second best do., $1, A. Brackenridge.

Best new plant, not exhibited before, $5, Thomas Fairley, for Eulalie zebrina.

Best 12 Asters, $2, and best 12 Balsams, $2, Cromwell & Congdon.

Best collection of hardy Evergreens, $5, Wm. D. Brackenridge, for Abies Menziesii, A. excelsa, A. alba, A. canadensis, Araucaria imbricata, Berberis japonica, Buxus angustifolia, do. do. fol. argentea, do. do. fol. aurea, do. do. fol. lat. aurea, B. do. fol. lin. argentea, B. Fortunii, Belis Jaculifolia, Cupressus thyoides, fol. aurea var. C. Lawsoniana, Cedrus Deodara, Cryptomeria Japonica, C. do. var. nana, Euonymus japonica, E. fol. argentea, E. japonicus radicans var., E. ovata-aurea, Ilex aquifolium, I. do. fol. argentea, I. latifolia, I. trifurcata, I. Fortunii, Juniperus hibernica, J. Suecica, J. oblonga var. pendula, J. squamata, J. Oxycedrus, Picea balsamea, P. polita, Pinus sylvestris, Retinospora obtusa, R. pisifera, R. plumosa, R. do. aurea, R. lycopodioides, R. do. aurea, R. Taxus Fortunii Mas, T. do. Fem, T. baccata, T. adpressa, T. japonica, Thuja filiformis, T. ericoides, T. globosa, T. retusa, Thuja orientalis, T. do. fol. aurea variegata, T. plicata, T. gigantea, T. tartarica, T. do. elegantisima, T. do. compacta, T. do. pyramidalis, T. do. Vervaniana, T. do. George Peabody, Thujopsis borealis, T. dolabrata, T. lactivirens, Torreya taxifolia; second best do., $3, Cromwell & Congdon.

SPECIAL MENTION.

A fine collection of well-grown plants from Patterson Park, exhibited by Wm. Fraser, Superintendent, highly commended. Messrs. Sam'l Feast & Sons had a large variety of fine and interesting plants. Chas. T. Bucher & Bro., of Waverly, a collection of plants, including a Begonia, seedling from Rex. Charles Hamilton, Waverly, collection of geraniums and foliage plants.

Mr. Wm. R. Smith, of the United States Botanic Gardens, and Mr. Wm. Saunders, of the Experimental Grounds and Gardens of the Department of Agriculture, exhibited choice and large collections of palms and other rare plants.

*Plants—Class II—Amateurs.*

Best collection of 6 distinct plants, $3, R. W. L. Rasin, (Wm. Smith, gardener;) second best do., $2, Wm. H. Perot, (F. Reinicke, gardener,) for Artocarpus metallicus, Cecropea metallica, Alocasia macrorhiza var., A. metallica, Dieffenbachia Bowmani, Aralia Guilfoylei.

Best single specimen plant, not variegated, $3, R. W. L. Rasin; second best do., $2, W. W. Spence, (John Eberhardt, gardener,) for Pandanus utilis.

Best 6 variegated foliage plants, $5, R. W. L. Rasin; second best do., $3, Wm. H. Perot, for Dieffenbachia picta, Anthurium cristallinum, Maranta tubispatha, M. Makoyana, M. Veitchii, M. Wagneril.

Best single specimen variegated foliage plant, $3, W. W. Spence, for Ananassa sativa var; second best do., $2, Wm. H. Perot.

Best 6 Caladiums, $2, W. W. Spence; second best do., $1, Ernest Hoen, (Conrad Hess, gardener;) best 6 Coleus, $2, W. W. Spence; second best, $1, E. Hoen.

Best 12 Ferns, $3, R. W. L. Rasin; second best, $2, W. H. Perot; best specimen Tree Fern, $5, W. H. Perot, for Alsophylla australis.

Best 6 Lycopods and Selaginellas, $2, R. W. L. Rasin; second best, $1, W. H. Perot, nigra, amabilis, gracilis, Guilfoylei, stricta, Fraserii.

Best 6 Dracœnas, $3, W. W. Spence, for amabilis, terminalis, ferra, Baptisti, Duffii, gracilis; second best, $2, W. H. Perot.

Best 6 Crotons, $3, R. W. L. Rasin; second best, $2, W. H. Perot.

Best 6 Begonias, $2, W. W. Spence, for Magnifica, Marquise de Maidaille, Inimitable, Duchess de Brabant, hydrocadifolia, Victoria; second best, $1, W. H. Perot; best 6 tuberous-rooted Begonias, $2, E. Hoen; second best, $1, W. H. Perot.

Best 6 Palms, $4, W. W. Spence, for Areca Verschaffeldti A lutescens, Latania borbonica, Brahea dulcis, Chamærops excelsa, Cocos Wedelliana; second best do., $2, R. W. L. Rasin; best 6 Agaves, $2, R. W. L. Rasin.

Best new plant, not exhibited before, $5, W. W. Spence, for Aralia elegantissima.

Best 6 Balsams, $2, August Hoen; best 12 China Asters, $2, W. W. Spence; second best do., $1, E. Hoen.

*Plants—Class III—Amateurs without Gardeners.*

For best 3 variegated foliage plants, $3; best 3 Caladiums, $2; best 3 Dracœnas, $2, C. H. Pepar.

Best specimen of Ivy, in pot, $1, Willie Feast.

MENTION BY THE JUDGES.

Mr. Chas. J. Baker (D. Thurley, gardener) had a fine collection of plants, containing a handsomely-grown Adiantum Farleyense. Mr. E. Whitman (F. Fauth, Jr., gardener) had an interesting collection, containing several fine specimens showing skill in cultivation. Mr. Wm. T. Walters (Alex. Frazier, gardener) had a superior collection of well-grown plants.

CUT FLOWERS.

Best 24 Dahlias, named varieties, $2, John Saul, Washington, D. C.; best 12 Tea Roses, 2 flowers of each, $2, John Saul; second best do., $1, Cromwell & Congdon; best 6 Bourbon roses,

$2, John Saul; second best do., $1, Cromwell & Congdon; best 6 Noisettes, $2, best 12 Remontants, $2, John Saul; best 24 Verbenas, $2, Robert Patterson; best 12 Perennial Phlox, $2, John Saul; best bride's bouquet, $3, A. L. Black; best bouquet Ornamental Grasses, $2, Sam'l Feast & Sons; best hand bouquet, $2, Miss Maggie Patterson; second best do., $1, A. L. Black; best 12 Dahlias, (amateur,) $2, August Hoen; best bouquet Native Grasses, $1, best display of wild flowers, $2, Willie Feast.

FLORAL DESIGNS, BASKETS, &c.

Best pair Hanging Baskets, $2, R. J. Halliday; second best do., $1, W. F. Massey; best Rustic Stand, filled with plants, $3, Robt. Patterson; second best do., $2, Thos. Fairley; best Table Ornament, composed of cut flowers, $5, James Pentland; second best do., $3, Miss Mollie Strawbridge.

*Amateur.*—Best Rustic Stand, $2, and best Table Ornament, $3, Adolph Stoll; best Wardian Case, $5, W. H. Perot, (F. Reinicke, gardener.)

*Amateurs without Gardeners.*—Best Rustic Stand, $3, Wm. Feast; best Hanging Basket, $2, Robt. Rasin.

SPECIAL PREMIUMS.

*First day.*—For design in cut flowers, $15, Miss L. A. Martin. For best display of Gladioli, $10, Saml. Feast & Sons.

*Second day.*—The prizes for Floral Work of any design was awarded as follows by the judges: To R. W. L. Rasin, Baltimore; C. L. Allen & Co., Queens Co., N. Y., and Joseph Kift & Son, Philadelphia, each $20. To John Cook, Baltimore Co., Md., $10. For best and largest display of Dahlias, $10, John Saul.

*Third day.*—For best design, composed of cut flowers, plants or fruits, or all combined, $25, C. L. Allen & Co., Queens Co., N. Y.; second best do., $15, Saml. Feast & Sons. For best and most artistic loose bouquet for the table, $5, John Saul; best basket of cut flowers, $10, Gustav Burger; second best do., $5, John Saul; best and largest display of cut flowers, $5, John Saul.

For the best and most attractive continuous display during the exhibition of cut flowers, floral designs, &c., $25, Saml. Feast & Sons.

FRUITS.

Best 12 varieties Apples, $6, J. W. Kerr, Denton, Md.; best and largest collection Apples, $10, J. W. Porter, Albemarle Co., Va.

Best 20 varieties of Pears, $10, John Saul, Washington, D. C.; second best do., $6, Wm. Fowler Clifton; best and largest collection Pears, $10, R. S. Emory, Kent Co., Md.; second best do., $6, John Saul; best dish fall Pears, $3, R. S. Emory; second best do., $2, Wm. Fowler; best dish winter Pears, $3, R. S. Emory; second best do., $2, John Saul; best peck Quinces, $3, Dr. John Miller, Talbot Co., Md.; best 12 varieties Peaches, $10, J. W. Kerr, Denton, Md.

Best 6 varieties Native Grapes, $5, Dr. I. D. Thomson; second best do., $3, John Cook; best and largest collection, $10, H. T. Scott, Prince George's Co., Md.; second best do., $6, Dr. I. D. Thomson; best dish of any variety, $3, Dr. I. D. Thomson; second best do., $2, Oscar Bellman, Washington Co., Md.; best native seedling Grape, raised by exhibitor, $4. John Cook.

Best 4 varieties Foreign Grapes, $6, Wm. T. Walters, (Alex. Frazier, gardener;) second best do., $3, Genl. Geo. S. Brown, (J. McTaggart, gardener;) special award, $3, Mrs. Chas. J. Baker, (D. Thurley, gardener;) best single bunch, $3, Wm. T. Walters; second best do., $2, Genl. Geo. S. Brown; best dish of Figs, $2, Wm. Fowler.

Special and honorable mention to Capt. E. Y. Goldsborough, Frederick, Md., for a very handsome collection of Pears, Peaches and Grapes, which arrived after the awards were made. Honorable mention to A. L. Corey, Kent Co., Md., for finely-grown Peaches, received too late for competition.

VEGETABLES.

Best 12 beets, $2, C. C. Carman; second best, $1, Andrew Goforth; best 12 carrots, $2, C. C. Carman; second best, $1, Andrew Goforth; best parsnips, $2, A. Goforth; second best, $1, C. C. Carman; best salsify, $2, R. W. L. Rasin; second best, $1, A. Goforth; best onions, $2, A. Goforth; second best, $1, C. C. Carman; best potatoes, $2, S. N. Hyde; second best, $1, C. C. Carman; best Lima beans, $2, S. N. Hyde; second best, $1, A. Goforth; best snap beans, $2, A. Goforth; best garden corn, $2, S. N. Hyde; second best, $1, C. C. Carman; best celery, $2, R. W. L. Rasin; second best, $1, A. Goforth; best drumhead cabbage, $2, and best Savoys, $2, A. Goforth; best Okra, $1, A. Goforth; best egg-plants, $2, C. C. Carman; second best, $1, A. Goforth; best tomatoes, $2, S. N. Hyde; second best, A. Goforth; best pumpkins, $2, C. C. Carman; best squash, $2, S. N. Hyde; second best, C. C. Carman; best and largest collection, $8, A. Goforth.

SPECIAL MENTION.

To W. S. G. Baker for mangel wurtzels; to Mrs. Isabella Brown for fine specimen field corn; to S. N. Hyde for tomato trellis; to A. Goforth for peppers and pie plants.

## Vegetable Garden.

**October.**—A good dressing of rich manure should be forked shallowly into asparagus beds. Beets and carrots should be dug before they are injured by frost, and put in trenches, pits or cellars. If in the latter, they keep better packed in dry sand. A convenient plan is to cover them in trenches a foot and a half deep, two feet wide, and as long as necessary. Cover lightly with earth, and as the weather gets cooler put on more, or spread trashy manure over all. See that the trenches are so arranged that water will not lodge in them. Cauliflowers may be put into frames or cellars, and will there head out. Parsnips and salsify for winter use should be dug and stored away; those not needed till spring may be left in the ground. Keep sprouts and spinach clean. Turnips and ruta-bagas should be taken up before severe frosts.

The remains of all late crops should be removed, and if possible the ground spaded or plowed up in readiness for the spring. All the waste vegetable matters should be added to the compost heap, though it is the practice of some to burn them that weed seeds may be destroyed.

## Floriculture, &c.—October, 1877.

By W. D. Brackenridge, Florist and Nurseryman, Govanstown, Baltimore County, Md.

### Greenhouse.

That the taste for horticulture in Baltimore and its vicinity has within the last five years made rapid progress, no one who has visited the late exhibitions of the Maryland Horticultural Society, or taken a stroll through the suburbs of our city, will deny. This progress may in a great measure have had its rise in the stimulus held out by the Horticultural Society, and partly by sister cities setting us the example of having their public parks and squares adorned during the summer with flowers and flowering shrubs, and by granting the people generally free access for their enjoyment, as no rank of individuals should be debarred from partaking of the refining influence which such exhibitions are sure to produce on the senses of the beholder.

When the mind of any one is once fairly inoculated with a love for Flora, he does not rest satisfied by viewing her beauties in the parterre, but straightway procures for himself a plant or Wardian case for his window; and should he have the means up goes a greenhouse or conservatory; at seeing which his neighbor becomes jealous, or catches the floral contagion, and, not to be behind, follows the example. If more time were spent in the adornment of our residences, both inside and out, thus making home attractive, the inducements would be less to visit club houses and other places of questionable respectability. Moderate exercise in the garden is conducive to the well-being of the physical man, and plants no sting in the mind to be afterwards eradicated.

It is always better to have tender plants under cover sometime before frost sets in than to have their tops injured by it; should the weather prove warm after they have been housed, then syringe with water overhead in the morning, and admit air freely during the day. Caution ought to be taken not to crowd the plants at this early season, and this can be avoided by keeping out of doors in a sheltered situation a number of half-hardy things, as Azaleas, Laurustines, Oleanders, Myrtles, and even the Camellia, will stand several degrees of frost; these latter can be taken in before severe weather sets in.

When we write in the above style, it is for the benefit of the amateur, or such as keep no gardener. The truly professional man should be able to attend to his own business without our aid.

Such people as have no proper hot-house will find that Begonias and all of the Cactus tribe will pass the winter best if kept in the warmest part of the green-house, observing not to give much water when the plants are in a dormant state. Prick off into pairs or single pots young plants of *Cinerarias*, *Chinese Primroses*, *Pansies* and *Mimulus*, keeping them near to the glass so as to prevent them getting drawn up weekly. Some people keep *Caladiums* growing all winter; we usually let them dry off, and keep the tubers in a warm, dry place near the furnace. Roots of Gloxinias and Gesnerias, as well as that of Achimenes, as the leaves show signs of decay, ought to have a diminished quantity of water, and ultimately withdraw it altogether, when the pots should be placed on their sides under the stage during the dormant season.

### Lawn and Pleasure Grounds.

Plant out Tulip and Hyacinth roots, observing to have the ground dug deep, adding a good supply of well-rotted cow manure and sand. The beds should be so prepared that no stagnant water will lodge about the roots during the winter. After the first frost cut off the tops of Dahlias six inches above the ground, laying the tops prostrate over the roots, so as to protect these from frost until they get properly ripened.

Tuberose plants that have not yet bloomed can be taken up and the roots placed in earth in the green-house, where they will open their flowers freely—thus prolonging their season.

In our last we suggested September as a good month in which to set out Evergreens; this work can be continued south of this during the present one; and so soon as the leaves begin to fall, deciduous trees and shrubs may be transplanted advantageously. We prefer fall to spring for this work, observing to fill up the earth well about the stem, so as to shed off the water during the winter, and when spring comes this can be leveled down. W. D. Brackenridge.

## Tabernæmontana.

For the production of pure white flowers in summer, we know of nothing better than the Tabernæmontana coronaria pleno (what a name for a pretty flower.) Its large double flowers are of the purest white, and during the summer will completely take the place of the double white Camellia. Botanically, closely allied to our common Oleander, it makes equally as large a bush, but with broad glossy foliage, much more handsome than the Oleander. It requires much more heat in winter than the Oleander, and it is best to treat it as a deciduous plant, keeping it comparatively dry in winter. In summer, shade from the sun and give plenty of water. W. P. M.

## Cyclamen Persicum.

These should now be started in growth, and now need great care to keep the blossom buds (which are formed with the leaves) from dampening off. They should be grown in comparatively small pots, and the bulbs placed on, *not in*, the soil. In watering be careful not to wet the top of the bulb, but pour the water carefully around the bulb. Many lose their bulbs in summer by drying them too much. We put ours beneath the greenhouse benches and examine occasionally to see that the bulbs are firm and hard. If any seem to be getting soft or tough a little water is given. In August shake them out and repot in fresh soil. W. P. M.

## Agricultural Education.

Dr. M. G. Ellzey, live stock editor of the *Southern Planter*, and professor of Agricultural Science at the Virginia Agricultural and Mechanical College, offers the following suggestion in the last issue of the *Planter*,—a suggestion which is based on good judgment and wise experience:

The editor of the *American Farmer* publishes a letter to one of his fellow-members of the Board of Trustees of the Maryland Agriculutral College, in which he handles the subject of agricultural education in a very able manner. The Maryland College has been very unfortunate, we think, in having so many interests represented in its Board of Trustees. If the private stockholders would surrender to the State, and the State would appoint a small Board, a majority of whom should be active members of some industrial pursuit, we think they would now quickly succeed in doing what they have heretofore failed to do; that is, in establishing a good, practical agricultural school. One word of warning we would offer: "Keep clear of ex-officio members of the Board who hold political offices."

## The Farmers and the Agricultural College.

At a meeting of the Gunpowder Agricultural Club, held September 15, the following resolutions were unanimously adopted:

*Whereas*, the recent action of the stockholders of the Maryland Agricultural College in sustaining the trustees thereof, has disappointed the hopes entertained that changes were finally about to be made in the management of that institution, which would constitute it a school wherein, as its title implies, instruction in agriculture, contrary to the policy which has too long prevailed there, would be accorded an importance and a prominence paramount to all others, thus subserving the interests of the farming community and promoting its progress and intelligence, as its founders designed it should; and,

*Whereas*, the State's aid was extended to this school, primarily for the furtherance of the above-named praiseworthy purpose, and not to support a course of study in which the same are assigned a subordinate rank; and,

*Whereas*, we regard this aid as now applied in the light of a palpable perversion of the State's funds from uses of prime advantage to us, to others in which we are but very remotely concerned;

*Therefore, be it resolved*, that we, the members of the Gunpowder Agricultural Club, invite the earnest co-operation of all clubs, granges and other agricultural associations, as well as individuals interested, in the adoption of prompt measures which will lead to the withdrawal of the appropriation hitherto granted to the college by legislative enactment; and

*Be it further resolved*, that we will set about the accomplishment of our object immediately by the circulation of petitions, addressed to the Legislature, embodying the objections herein expressed to a misapplication of public money, and hereafter when the proper occasion arrives, by personal appeals as opportunity offers to those who shall be chosen to represent us in the State Assembly, and that we hope this course will be approved of and imitated by our brother farmers in the different counties.

An old farmer of the State, long interested in the improvement of his class, writes:

"The mingling of the military with agricultural instruction is as inconsistent and incompatible as the attempt to mix oil with water. The two things are entirely at variance with each other. The one is, or ought to be, eminently and severely conservative. The other is notoriously wasteful and destructive. The one is, or ought to be, to teach habits of industry, thrift and economy. The other inculcates habits of idleness, waste and extravagance. The one plainness of dress, manners and simplicity of life. The other glitter, show—a lofty air and manner, well calculated to fill the youthful mind with ideas of pride and ambition, and a distaste for the quiet pursuits of agriculture. In no sense and in no view can these two dissimilar avocations of life be harmonized. The one must, in the nature of things, destroy the other, and the more humble and retiring is always the victim of the proud, lofty and ambitious.

It is lamentable to think that a school with 300 acres of land and an annual endowment of $13,000 is inferior to two or three private schools without any endowment that I can name,—notably the Howard Institute, Mr. Lycurgus Mathews, Howard county, St. James', Mr. Onderdork, Washington county, and a half dozen schools under the control of the Roman Catholic church."

## The Baltimore Co. Farmers' Club.

The committee appointed at the last meeting of this club, held August 1st at the house of Mr. J. Green, to express the views of its members with reference to the present objects and purposes of the Maryland Agricultural College, beg leave to report as follows:

That in the opinion of this club, the great object for which this institution was established was to be the instruction of youth in practical and experimental agriculture, and to fit them to successfully carry out its results and practical instruction of others in its theory; and we hope the appropriation of moneys by our State will be used solely for this purpose.

That we view with regret and surprise a great desire to turn it into a military institute for the education of youth for West Point and other military institutions to the detriment of the objects for which it was intended.

We therefore cordially endorse the action of Wm. B. Sands and others in their efforts to reorganize it for its original objects.

EDWARD O'DONOVAN, *Chairman*.

"The discipline of the school is excellent."—*Report of President Parker, June 6th.*

On the above as a text we have a commentary in the shape of a letter, lately received from a late pupil there, which tells a very different story. We may publish it in our next.

# The American Farmer.

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## OCTOBER 1, 1877.

### To the Friends of the American Farmer.

The present is an auspicious season to extend the circulation of our journal. For this work we depend largely upon the tried partiality of its numerous friends. Their aid, never asked in vain, we again invoke in behalf of the *Old Pioneer*, that it may not only continue its visits to old friends and readers, but be introduced to many new ones. Those who know its worth (whatever measure it may have) are solicited to commend it according to that knowledge to their neighbors and friends. With the improving outlook before our farmers, the support of the *Farmer*, we venture to suggest, ought to be largely widened. Will not those whose confidence it has so long enjoyed do their part, that it may be?

In accordance with usage, to all new subscribers whose names are received before the end of the year, whether singly or in clubs, WE WILL SEND THE LAST THREE NUMBERS OF THIS VOLUME GRATIS.

☞Capt. L. H. McGinnis pays attention this month to his friendly critic of last. We bespeak for his paper a careful and attentive reading. This reminds to say here what we should have said in our last issue, that the No. of the True Theory appearing in it was to our mind one of the most interesting and valuable that has yet appeared from our enlightened correspondent.

### Death of Benjamin Hallowell.

It is with unfeigned sorrow that we are called upon to record that this great and good man passed away from earth on the 7th ultimo., at his farm, near Sandy Spring, Md., in the 79th year of his age.

Benjamin Hallowell's life-long profession was that of a teacher, and it was a calling he was peculiarly qualified for by nature. Yet he was far more than this. Endowed with intellect of the noblest amplitude, he was equally distinguished as chemist, mathematician, author, agriculturist. His great mental powers, vast learning and enlarged experience, were, however, carried with the simplicity of a little child, and many, doubtless, met him who little suspected his achievements in the world of science and letters. As philanthropist, his aims were for the highest good; as philosopher, he sought the *practical;* as teacher, he reached for thoroughness. As a farmer, he at once investigated and practiced; and the impress of his teachings and the example of his success were quickly felt and long continued, not in his own vicinity merely but through many parts of our own and other States.

It is not in our power to portray his lofty character, nor to do justice to his eminent services to his fellow-men. His mind and his career were so many-sided that the evidences of his powers are spread over a wide circle. A memoir of Mr. Hallowell, with reference especially to his life and writings as an agriculturist, has been prepared for the *American Farmer* by Mr. Wm. Henry Farquhar, but it unfortunately reached us too late for insertion in the present issue. It will appear in our next, and renders anything further from us superfluous.

We may be permitted to say, however, that it was our good fortune to occupy, for a period only too short, the relation of pupil to this great teacher. Charged with the inauguration of a new work, surrounded by embarrassments and with unexpected difficulties in the way, his method, firmness and zeal were only surpassed by the transparent candor of his motives and his devotion to the law of love which animated his every act.

Had his health proved equal to the task, those who knew him cannot doubt but that he would have placed upon a foundation of enduring solidity our Agricultural College, and demonstrated what a field of usefulness and honor was open before it.

It will not be out of place to state here that for his services as president of the college he declined to accept any compensation whatever, desiring only to aid in building up what he had for a quarter of a century ardently desired to see—an educational institution where Science and Practice should go hand in hand.

## Marshall P. Wilder.

The only regret the hosts of the occasion,—we can only hope the guests too had none other,—on the gathering here of the American Pomologists was the unexpected and lamented absence, by reason of illness, of the venerable and beloved president of the society, Mr. Wilder.

His devotion to its cause, his energy in its work, coupled with his cheerfulness and animation in presiding over its deliberations, make him the inspiring spirit of its meetings; and that a sudden attack should have prevented his being present at its late session, was the more felt that up to within a few hours of its assembling it was confidently expected he would preside.

It is not too much to say that his absence was more felt than would have been that of half a score of others; and the disappointment was no greater to those who have worked so long side by side with him, than to those later friends who, knowing him only by his fame, had not yet formed his personal acquaintance.

It gives us great pleasure to know that Mr. Wilder has entirely recovered from his recent indisposition. Mr. Robert Manning, Secretary of the Massachusetts Horticultural Society, writes us under date of September 22d: "Mr. Wilder celebrates his 79th birthday to-day by a dinner with the Massachusetts Agricultural Club. He appears quite as well as before his recent illness."

## The Agricultural College.

We give elsewhere a report of the recent meeting of the stockholders in this corporation. That meeting showed that a large majority of those who hold or control the stock are satisfied with the aims, the operations and the administration of the institution as now carried on. Save that the objects and motives of the opposition were grossly misrepresented in the canvass, the questions at issue were plainly and broadly marked.

In a vote larger than ever before cast, and which appeared to comprise nearly every paid-up share of stock, two-thirds of the whole voted against returning the college to its original and appropriate functions, against making it a distinctive school for the liberal education of our future farmers and land owners, against giving it a useful and practical character suitable to the day and the needs of the agriculture of Maryland: against this, and for continuing the present milk-and-water system, for having it ape our literary schools with which it was not intended to compete, for continuing the inappropriate work of preparing boys for naval and military academies, for perpetuating it as a military school to be supported by the funds dedicated to agriculture, and for maintaining at its head a sailor who has no knowledge of, and who has and can have no sympathy with, agriculture, yet who virtually directs, controls and appoints all connected with the institution—including, as would seem from the late meeting, the trustees themselves.

It is in effect to remain as now, neither fish, flesh nor fowl—disowned by Literature, usurping the rights of scholastic institutions, and freely distributing without show of law degrees which confer no distinction and carry no weight—repudiated by Agriculture, the farmers knowing too well its ill-fitting title has no significance for them—and only a poor hand-maid of the Army and Navy, serving without the gates.

The policy of the stockholders being settled, the only hope of rescuing the college from its present condition is an appeal to the Legislature for its intervention. The system of control is at best a vicious one, and only by entirely remodeling it can the institution be lifted to a plane of usefulness. At present, though it costs nearly $20,000 a year, and could not exist a day without the support of the State, it can be, as it has been and is, run in the interest of a few individuals.

As a stockholder, we shall ask the next Legislature either to so change the charter that the money given for agriculture shall not be so barren of results, or to withdraw an appropriation worse than profitless. The farmers of the State, too, we doubt not will have their say as to the further support from the public treasury of an institution originated for their benefit, but which does none of them a scintilla of good.

An institution founded upon the fundamental idea of preparing young men for the prosecution of their business as cultivators of the soil, can only succeed in the hands of men possessed themselves of some faith, some enthusiasm and some capacity in that direction. We place upon record here our conviction, that those who now control this one cannot make it a success. Agriculture is not the spirit of the place. The farmers appreciate this, and we do not hesitate

to say to them here, as we have had frequent occasion to say privately to inquirers, that, in our belief, this is not the place for their sons who are to be fitted for intelligently and successfully conducting the operations of a farm, or whom they desire to infuse with a love for farm-work, and an ambition for the elevation of agriculture.

Fine promises and extravagant talk cannot induce their patronage; and, consequently, dependence for pupils must be upon that special class of youths who have, or expect to have, appointments to West Point or Annapolis—whom it is especially to the advantage of Captain Parker to have, since his salary is largely contingent upon their attendance—who come, stay a few weeks, go again and are succeeded by others,—a class who look upon young men preparing for the farm as boors destined to a menial occupation. Yet without these the college must fail,—and with them it cannot succeed.

The only argument adduced to show that the present board deserved endorsement, was that it had "paid the debt," and had a balance on hand. This influenced many votes. Yet the positive assurances on this point do not seem borne out by the true circumstances of the case.

Let us see about this debt. When Dr. Register was displaced the debt was reduced to some $4,000, and was being rapidly obliterated. To this balance was added about $9,000 by the administration of General Jones,—an administration, take it all in all, unquestionably the most inefficient and disastrous the college has ever known, the contenance and support given it by a number of the present trustees, who wished to continue it, to the contrary notwithstanding

Mr. Charles B. Calvert shows in his letter in our September issue that "a majority of these same trustees created this debt in less than two years." This majority was composed of Messrs. Earle, Lee, Whitman and Dodge. Mr. Calvert further shows that the plan for extinguishing the debt was originated by him immediately upon his accession to the board, carried through, notwithstanding the opposition of some of those gentlemen, and given to the public through the *American Farmer* of June, 1875, before the election to the presidency of Captain Parker, who now claims the credit for it and that its success was due to the receipts from the special students influenced by him to the college.

Doubtless the same merit would have been claimed if, by some strange fortune, instead of failure and ridicule smothering it at its birth, success had smiled upon the plan of establishing at the college a "Nautical School," with "a special course of instruction for youths in navigation, seamanship, marine enginery," &c., and to which were cordially invited "captains and mates in the merchant service wishing to improve themselves in the theory of navigation," &c. Prof. Worthington, who was at the college at the time, says, Captain Parker "was no doubt the real author of that famous scheme," and that "several who are now members of this majority who are acting together in the board did favor it." That scheme was no more antagonistic to the real purposes of the college than the one which brought ampler pecuniary returns.

If for the past two years the college had been run as a cotton mill, or a wooden pail factory, it would have been more to the advantage of the State and the community in which it is located, and done as much to promote the agricultural interests as, under its nominal designation, it has as a fifth or sixth rate school—its teachers "occupied in an everlasting round of grammar, spelling, geography and arithmetic, the work of our public common schools." We deny that any credit belongs to a management which could extinguish a debt only by wholly perverting the main end of the institution.

Almost under the shadow of the national capitol, the college has been a conspicuous finger-post of incompetence. More indeed than that: standing bare, gaunt and unlovely, on a great thoroughfare of travel, it has, by its failures, embarrassed and discouraged the cause of agricultural education over the whole land. Possessing, by its very location, unparalleled advantages, they have been cast aside, or wilfully turned into obstacles. Since the lamented Calvert, its direction seems never to have reflected upon or sought to avail of the wealth of the scientific resources at its command in the almost adjoining city of Washington; a city only considered as a reservoir from which to draw pupils, who, attracted not by any agricultural features, but only by cheap rates and convenience of access, have helped to increase the numbers registered.

The lists of pupils have lately been disingenuously paraded to the world as showing the success of the school. The actual attendance is not given, nor the number of boys preparing for the academies. For instance, at the session before the last, the "register" showed 76 pupils. But of these, 37 were these special students, and of the remainder, 7 only were from the agricultural community of Maryland. Last session, by the catalogue, there were 81 pupils. We cannot say what proportion of them were preparing for Annapolis and West Point. We do know that

only from five to seven were in the classes of practical and scientific agriculture.

And this is an *Agricultural* College,—amply, liberally, supported by the State, that her sons may be fitted to subdue the earth!

☞We have from Brighton Grange, Md., a report on the distinctions between Politics and Political Economy. It should have appeared in our September issue, but was crowded out, and we are obliged again to defer its appearance. We will try to give it in our next.

## Meeting of the Agricultural College Stockholders.

The adjourned meeting of the stockholders in this corporation met at Guy's Hotel, in this city, on the 11th September. The attendance was larger than ever before, and the vote was the highest ever cast.

Hon. A. Bowie Davis called the meeting to order, and the proceedings of the former meeting were read. Mr. Davis explained his object in calling the meeting. He wished to have rectified the oversight at the April meeting, when a new trustee was elected without a vacancy being made in the board. His views as to the need of a change in the operations of the college were sustained by a statement in the journal published by Mr. Whitman, one of its trustees, where it was said that at the commencement exercises in June "the platform was handsomely ornamented with cross-swords, shot-guns and evergreens; while the walls along down the room bristled with muskets;" and that "some thought that emblems of agriculture, such as the sickle, the plow, the sheaf, &c., would have been more suitable decorations for an agricultural college." In addition, Mr. Davis thought the expression by the president of the college on the passage of Mr. McHenry's resolution savored of a doubt by him as to the right of the stockholders to give such instructions, and ought to be met. Besides this, Mr. D. thought the tabling by a large majority of a proposition before the board looking towards carrying out that resolution, deserved that the stockholders should again express themselves on the subject.

Mr. Otho H. Williams was then called to the chair, and Mr. B. McL. Hardisty made secretary.

Governor Carroll explained that in his message to the meeting of August 9th he did not mean that he believed those present were endeavoring to gain any unfair advantage against the college administration, but that he thought it might be supposed they were.

The Chair having asked some one to state the object of the meeting, Mr. Geo. H. Calvert said the meeting was called to elect a new board of trustees that would carry out the original object for which the college was founded, and that would take more interest in its success than the present board.

Mr. Wm. B. Sands said the main object of the meeting was to have the stockholders express themselves with a distinctness which could not be misunderstood as to the future management of the college so far as certain questions in dispute were concerned, and having determined that, to elect a new board which should carry out the policy determined upon, or change the present one so that it should not only be harmonious but unanimous; and he offered the following resolution:

*Resolved*, That the preparation of boys for naval and military academies is not proper work for our Agricultural College, and that the trustees be requested not to allow it there hereafter.

Col. Earle, who, it was evident, did not want to vote on this kind of a proposition, said it was "dodging the question," and asked that some one would move to remove the present board.

Mr. Conrad moved that the places of the present board (naming them) be vacated. This was seconded.

Mr. W. N. Calvert addressed the meeting favoring the motion. He said experiments had been made at the college in placing generals, doctors, divines and sea captains at its head, and all other kinds of experiments except experiments on the farm; that the present board had utterly failed to do anything towards accomplishing the objects of its foundation, and that it was time to make a change.

Col. Earle made an elaborate and lengthy defence, in his usual eloquent style, of the management of the college. He declared that more agriculture was taught under Captain Parker's administration than ever before. He read with emphasis the report of the professor of agriculture, and indicated that it was everything that could be desired, saying that if the farmers of the State did not choose to send their sons to be educated, then it was their own fault. He said it was reported in his county that forty of the pupils were preparing for the military and naval academies, and he inquired of Mr. Sands if he was responsible for that statement, when the report of the president of the college showed there were but nine.

Mr. Sands said he did not know how many there were. If there were nine at the date of Captain Parker's report, and they changed four times in the year, that would make thirty-six—not far off from forty; and he saw a gentleman present who was during the preceding session a professor at the college, and who, in a published statement, had shown that in that year there were thirty-seven present—there being during the same time but seven boys from the agricultural community of Maryland, and nineteen of her counties not sending one. He knew further, from a statement made direct to him by the registrar, that at the last session there were only *five* boys studying practical and two scientific agriculture; and he said the reason there were not more was that the farmers of the State had not confidence in the school,—knowing their sons could not obtain there, as now carried on, the sort of an education they desired them to have.

Mr. George H. Calvert, jr., submitted to Mr. Earle, whether as a trustee he ought not himself to be fully apprised of the number of pupils not only on the rolls but in actual attendance, and what they were doing.

Mr. E. S. Calvert said Captain Parker's administration was a good enough one for him; it had "paid the debt."

Tellers having been appointed a vote was taken, which resulted as follows:

Against removing present board.....4,981
In favor of removing present board.....2,640

Mr. Sands then offered his resignation as a trustee. He said he was not in sympathy with the aims of the present board, and did not believe their methods could make the college a success. He thought the only way to make it a useful institution was to give it, and at once, the distinctive character aimed at by its founders, and to discard the policy now in force, and contrary to that character. His resignation was accepted.

Mr. Chas. B. Calvert nominated Mr. J. Howard McHenry to fill the vacancy. No other nomination was made, and the question was put by the chair, and Mr. McHenry declared elected.

Mr. McHenry was understood to say that he agreed in the main with the programme favored by Mr. Sands.

The meeting then adjourned.

## Experiments at the Agricultural College.

The organic law of this institution provides that "it shall be the duty of said Board of Trustees to order and direct to be made and instituted on said Model Farm, annually, a series of experiments upon the cultivation of cereal and other plants adapted to the latitude and climate of the State of Maryland, and cause to be carefully noticed upon the records of said institution, the character of said experiments, the kind of soil upon which they were undertaken, the system of cultivation adopted, the state of the atmosphere, and all other particulars which may be necessary to a fair and complete understanding of the result of said experiments," * * * and also that "said Board of Trustees shall, at every session of the Legislature, present in printed pamphlet form a full and correct report of the said Agricultural College and Model Farm, and the condition or final results of all experiments undertaken as provided for in the foregoing section."

The present Board, ("which has paid the debt,") so far as the public has learned, has never until the past year attempted to obey this law. We will show from the report of the professor of agriculture, the intelligent, painstaking and useful manner in which the experiments have been carried on for the benefit of the farmers of Maryland,—premising that it is designed to submit this document, and the reports of the other professors as included in the "Register" as the full and correct report required by law to be presented to the Legislature.

"I have seeded 21 acres in wheat, *experimenting* with three standard fertilizers procured from E. B. Whitman, Baltimore, namely: British Mixture, Phosphate of Lime and Bone Dust. The wheat was drilled in, seeded with timothy and clover, and rolled down in the spring. The result will be reported after harvest. The present prospect for a good crop is very promising. There are 15 acres seeded in oats and clover, fertilized with phosphate of lime, in fine condition. This year's corn crop of 26 acres is top-dressed with 1,000 bushels of shell lime, and fertilized in the hill one-third with Ammoniated Dissolved Bone, from John Merryman & Co.; one-third, Ammoniated Superphosphate, from Maryland Manufacturing Company, and the other third with Bone Compound, from M. Moore, Georgetown, D. C. I have planted 12 barrels of Irish potatoes on land thoroughly prepared, top-dressed with stable manure, and fertilized in drill with Whitman's special Potato Fertilizer. * * * * I have also experimented with the following seeds received from the Agricultural Department, all heavily manured and well put in, namely: a very excellent quality of oats, barley, mangold wurtzel, sugar beet and corn. The result will be reported."

How lucid, definite and profitable! The farmers ought willingly to pay taxes for such valuable information. How interesting to the farmer in Frederick or Cecil to know that our "Agricultural College and Model Farm" is "experimenting" with Whitman's "British Mixture," Whitman's "Phosphate of Lime," and Whitman's Bone Dust, on wheat, and with Whitman's "Special Potato Fertilizer," on potatoes. And with what breathless concern they peruse the announcement that the same model institution has also "experimented" with seeds from the free seed-shop of the Department of Agriculture.

## The "Junior Gunpowder Club."

This association of young farmers of Baltimore county passed recently the following resolutions:

*Resolved*, That the Junior Gunpowder Agricultural Club of Baltimore county endorse the action taken by *The American Farmer* in its effort to build up the Agricultural College of the State of Maryland from the deplorable condition into which it has fallen in subverting the intention or design of the College, and that we cordially endorse the resolutions of the Gunpowder Agricultural Club as published in the last issue of the *Baltimore County Union*.—[Given in August *Farmer*.]

*Resolved, further*, That as farmers we wish the College to be made an experimental station from which we may derive some benefit, and where farmers' boys may be taught the science of farming, and the College be a credit to the State.

THE CAROLINA FARMER, published at Wilmington, N. C., by Wm. H. Bernard at $1.50 a year, is received. It is neatly gotten up and printed, and contains a large variety of useful and readable matter. We wish it all prosperity.

## "They have paid the debt."

Under date of June 6th, President Parker reported to the trustees of the Agricultural College:

"The registrar will lay before you a report showing the condition of the finances, from which you will see that the college *is now entirely out of debt*, (having in two terms paid an old debt of $13,274.23) and with a balance in our favor."

This statement, in one or another form, has been reiterated again and again; and it has been the only apology for the deficiences at the college, for the absurd system under which it is run, for the total abnegation of agricultural features, that the present administration "has paid the debt."

Now, it would be interesting to have some one answer the following:

When did the Board audit the accounts of the present registrar?

Has it ever audited them since his appointment?

When the above statement was made, *and up to the date of the September meeting*, was there not at least one *unsatisfied judgment* against the college of a considerable amount? Also, an unpaid note of a still larger figure? Also, advertising accounts due more than one journal in the State, and due more than two years? And other bills of greater or less sums?

Does the only credit ingenuity can claim for the administration rest, after all, upon a fictitious foundation?

## State and County Fairs in October.

The Virginia State Agricultural Fair will be held at the grounds near Richmond, commencing 20th October, the week after the holding of the North Carolina State Fair, which will be held at Weldon, N. C., from 16th to 20th October.

The Maryland State Fair, as before announced, is to be held at Westminster, Carroll Co., under the patronage of the county society, beginning 16th October.

The Somerset Co. (Md.) County Fair will be held at Princess Anne, October 3 to 6.

Wicomico Co. (Md.) Fair at Salisbury, October 10 to 12.

Dorchester Co. (Md.) Fair at Cambridge, October 17 to 19.

Frederick Co. (Md.) at Frederick, Oct. 9 and 12.

Harford Co. (Md.) Fair at Bel Air, Oct. 9 to 12.

Laurel (Delaware) Peninsular Agricultural and Mechanical Fair, October 24 to 26.

Fairfax Co. (Va.) Club Fair, Oct. 3, at Harndon.

Lynchburg (Va.) Fair, 23d to 26th October, at Lynchburg.

Baldwin (Augusta) Fair at Staunton, Virginia, 9th to 11th October.

Tazewell Co. (Va.) Fair, on 2d to 4th November.

Piedmont Agricultural Society (Va.) Fair, October 16 to 19.

The Washington Co. (Va.) Fair at Abingdon, Va., was held on 26th September. The Talbot Co. (Md.) Fair at Easton, September 26 to 28. The Kent Co. (Md.) Fair near Chestertown, September 25 to 27. The Montgomery Co. (Md.) Fair at Rockville, September 12 to 15. The Woodlawn (Va.) Agricultural Society held its first exhibition at the Corn Exchange, Alexandria, on 26th, 27th and 28th September.

## Farming in Pennsyvlania.

We are indebted to Thos. J. Edge, Esq., Secretary of Pennsylvania State Board of Agriculture, for a statement of the average of 109 reports from that State, which present some interesting statistics:

Per cent. of average yield of crops named, viz: Wheat 89; rye 93; barley 65; oats 105; hay 102; buckwheat 98. Condition of crops named: Corn 88; potatoes 106; garden products 92; tobacco 85.

Estimated cost per bushel of crops named: Wheat 91; rye 66; barley 50; oats 25; corn 53; potatoes 29 cents.

Per cent. of fruit crops, actual and prospective: Apples 27; peaches 29; pears 51; cherries 72; grapes 88; berries 68.

Farm wages:—By the month, (whole year) with board, $12.39; by the month, (summer months) with board, $15.10; by the day, with board, (regular work) 80 cents; by the day, without board, (regular work) $1.15; by the month, (whole year) without board, $20.97; by the month, (summer months) without board, $26.07; estimated cost of board per day 35 cents.

THE SEPTEMBER proceedings of the Potomac Fruit-Growers, in type, was crowded out of this issue.

## Double Tuberoses.

In the Aug. number of the *Gardener's Monthly*, in answer to a correspondent who complains of single blooms among his double tuberoses which he has tried in vain to "weed out," the editor says that the double tuberose is apt to revert to the single state, and particularly so in some seasons. Now with all due respect to Mr. Meehan's experience, we don't believe a word of it. The fact is, so far as we have noticed, the Philadelphia stock of tuberoses is badly mixed with single ones. Our stock of tuberoses has been grown from bulbs imported *seventeen* years ago. (Your printer in a late number made us say two years.) In all this time we have never seen a single-flowered specimen, and we have grown thousands annually, until two years ago we exchanged some plants with a Penna. Florist for tuberose bulbs. This lot had a great many single ones in it, and on our complaining of it he said that his stock was from H. A Dreer, and he thought he had "weeded out" all the single ones. A little reflection will show any one who cultivates tuberoses that they cannot be weeded out, except by saving offsets only from bulbs that *have bloomed double*. In planting out the bulbs in Spring the offsets are all stripped off and planted for next year's stock, and when the single-flowered plants are discovered and "weeded out" the offsets from them are all growing, to be again weeded out the next season *ad infinitum*. Some seasons the bulbs make more offsets than in others, and the next season will be "peculiarly favorable to the production of single flowers." Start with a clean stock of double-flowering tuberose roots, and never buy any in Philadelphia, and my word for it they won't run back single. W. F. M.

## Glencoe Grange.

Inclosed resolutions were passed by Glencoe Grange, No. 160. W. W. C. STEWART, *Sec'y.*

*Resolved*, In the matter of the Agricultural College, that in view of this Grange this institution should be made a professional agricultural school, with special development of the experimental and practical features, and that its main object should be the preparation for the life-needs of our future farmers.

*Resolved*, further, that the representatives of the State in the Board be asked to make this change in its operations.

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## Baltimore Markets—September 29.

*Quotations given below are Wholesale Prices:*

**Breadstuffs.**—*Flour*—Dull and heavy. We quote Howard Street Super $4@5; do. Extra $5.25@6; do. Family $6.50@7; do. choice and fancy trade brands $7.50@8.25; Western Super $3.75@4.90; do. Extra $5@6; do. Family $6.50@7; City Mills Super $4@4.75; do. standard Extra $5.25@6; do. medium Extra $6.50@6.75; do. Rio brands Extra $7.25@7.50; Spring Wheat Flour $5.75@6.50; do. patent $5.50@8; Patapsco Family $8.75; do. Extra $8.50; Cape Henry Family $8.50; Chesapeake Extra $8.25; Fine $3.25@3.50; Rye Flour $4@4.25; Corn Meal, City Mills, ₩ brl. $3.25.

**Wheat.**—Southern steady, but dull. Western dull and irregular. We quote as follows: Southern red, common to good, $1.10@1.35; do. Fultz $1.40@1.45; do. amber, long-berry, $1.48@1.50; Western steamer $1.29; do. No. 3 red $1.37; do., October delivery, $1.42; do., November do., $1.38½.

**Rye.**—Is steady and firm, with sales prime at 68 cts., and choice at 69 cts.

**Corn.**—Southern, receipts of which are exclusively of white and liberal, is in demand. Yellow nominal. Western quiet, but firm. We quote Southern white 71c.; do. yellow 61 cts.; Western steamer, spot, 55 cts.; do. mixed 57½ cts.; do., October delivery, 57¾ cts.; do., November delivery, 59½ cts.

**Oats.**—Quiet, steady and firm. We quote Western mixed 33@35 cts.; do. bright 35@36 cts.; Southern fair to good 32@35 cts.; do. prime 36@38 cts.

**Hay and Straw.**—Hay in demand, and firm. Straw steady. We quote: Hay—Cecil County $16@18; do. Prime Pa. and Md. $14@16; do. Western 13@15; do. Mixed $12@14; do. Clover $12. Straw—wheat $7; do. oat $8; do. rye $13.

**Provisions.**—Firm, with the order trade brisk. We quote: Bulk Shoulders, packed, 7¾@8; do. C. R. Sides, do., 8¾; do. L. C. Sides, do., 8¾@8¾; Bacon Shoulders, do., 8¾; do. C. R. Sides, do., 9¾@9¾; do. Hams, sugar-cured, 12½@13½; do. Shoulders, do, 9¾@10; do. Breasts 10¾@11; Lard, Refined, tierces, 10¾; Mess Pork, ₩ brl., $14.50.

**Butter.**—Active. N. W. tubs 20@23 cts; Western Reserve 18@20 cts.; Glades 17@22 cts.; Nearby Roll 15@20 cts. *Cheese.*—Eastern good to choice new 12½@13¾; Western, good to choice, 12@13 cts. *Eggs* 17@18 cts.

**Seeds.**—Clover 11@12 cts. ₩ lb.; Timothy $1.65@1.80 ₩ bushel.

**Cotton.**—Quiet. Receipts very light. We quote: Good Middling 11⅛; Middling 11⅛@11¼; Low Middling 10⅞@11; Strict Good Ordinary 10⅝; Good Ordinary 10¼@10⅜.

**Tobacco.**—Ohio in good demand. Transactions in Maryland are light from the poor grades offering. Good grades would bring full rates, but the inferior descriptions are not wanted. We quote: Maryland—inferior and frosted $2.50@3; do. sound common $3@4; do. good common $4.50@5.50; do. middling $6.50@7.50; do. good to fine red $8@10; do. fancy $10@15; do. upper country $4@20; do. ground leaves, new $3@8. Virginia—common and good lugs $4@6.50; do. common to medium leaf $6.50@8.50; do. fair to good leaf $9@12; do. selections $13@17; do. stems, common to fine, $1.50@3.

**Wool.**—Dull. Good unwashed 25@30 cts.; tub-washed 32@40 cts.; fleece-washed 33@35 cts.

**Live Stock.**—*Beef Cattle*—Slow. We quote best on sale $5.75@6.25; usually rated first-class $4.75@5.35; medium or good fair $4@4.25; ordinary thin Steers, Oxen and Cows $3@3.75.

**Swine.**—Fairly active. We quote good corn-fed hogs at 7½@8 cts.; common light hogs 7@7½ cts. net.

**Sheep.**—In fair demand for good ones. We quote butcher Sheep at 4@5 cts. gross. Stock Sheep $3@3.25; Lambs 4@5¼ cts. ₩ lb. gross.


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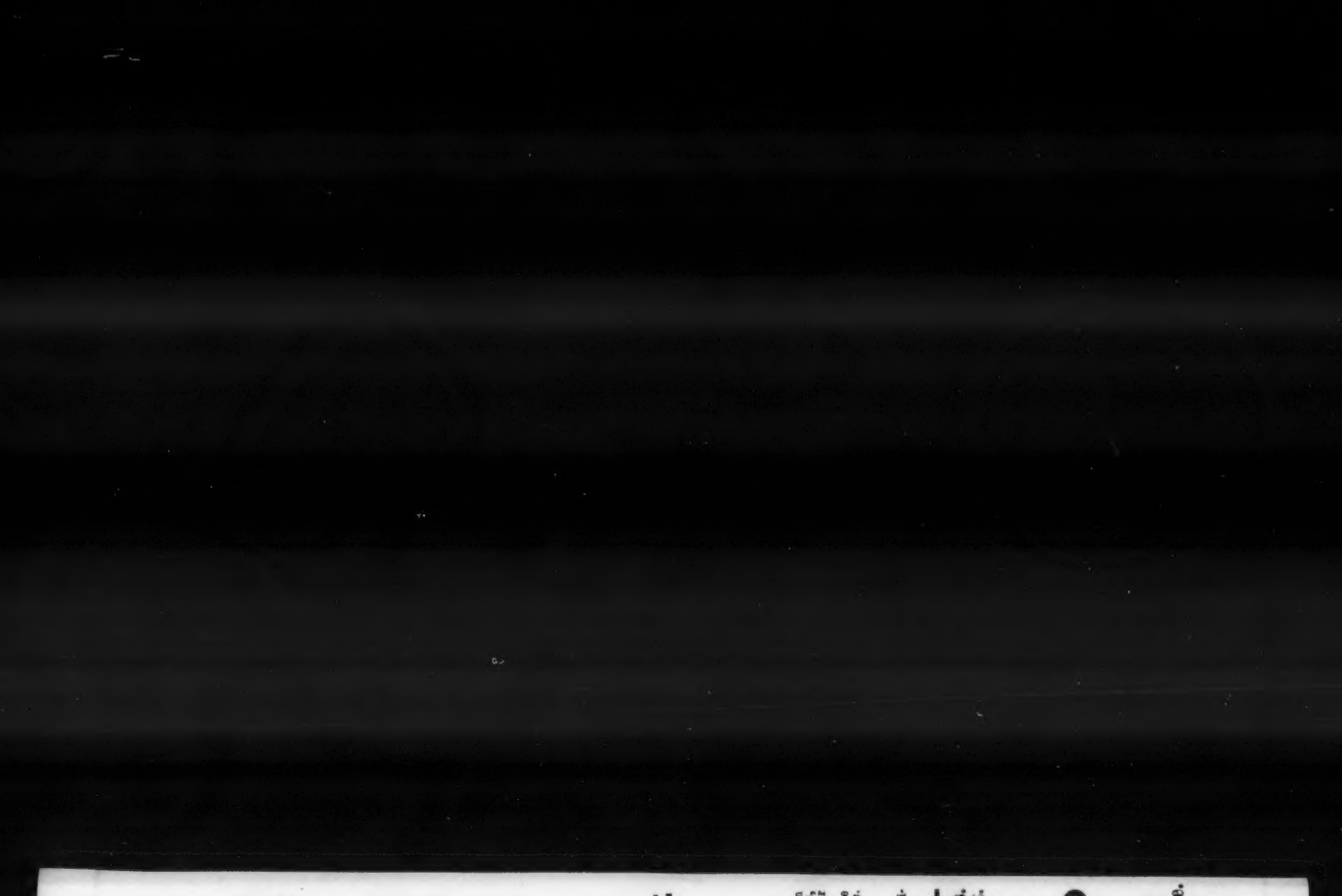

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